



GIOVENZANA
INTERNATIONAL B.V.

TECHNO-LIFTING EQUIPMENT

LIFTING EQUIPMENT CATALOGUE

GIOVENZANA INTERNATIONAL reserves the right to modify, in order to improve their performance, all technical and functional characteristics of the products shown in the catalogue without prior notice as this information is intended for general knowledge and is not legally binding.

THE PHILOSOPHY

Giovenzana's philosophy is based upon the basic principles of business management, dynamism and the continuous research for the operator's needs in the field of man-machine interaction. These principles, thanks to the experience and professionalism of its staff, guarantees Giovenzana's development and growth.

THE HISTORY

With over 60 years experience in this field and excellent managerial skills, Giovenzana has maintained growth relying upon:

- market research
- product placement
- manufacturing technology, and above all, team work

THE PRODUCTS

Giovenzana, leader in the industrial technology field, is the first choice for:

- handling equipment
- automation
- lifting equipment
- maintenance
- command and control of moving parts

Development, design and production are combined to reach a common goal and cover most industrial applications.

QUALITY AS A WAY OF LIFE

The commercial success of a product does not happen by chance, but is the end result of the combined efforts of all human resources operating within an organizational structure that is devoted to quality.

Giovenzana is an **UNI EN ISO 9001:2008** certified company. Today, Giovenzana's goal is not only "to manufacture a quality product,"

but also to ensure the protection of our production cycle processes Giovenzana's Company is certificated **UNI EN ISO 14001:2004**.



GIOVENZANA INTERNATIONAL B.V.

The Company

THE PRODUCTION

The solutions offered by **Giovenzana** are the results of the close examination of the requirements of industrial electrical accessories, and are in line with all relevant international standards. It comprises of three main sectors: Industrial automation, lift and lifting equipment.

AUTOMATION

Automation includes Phoenix cam switches from 12A to 630A and Regolus switch disconnectors from 25A to 160A; Pegasus control auxiliaries with screw or spring loaded terminal contact blocks; limit switches with die cast or molded casing and safety switches; foot switches and micro switches.

LIFT

Throughout the years, continuous technological research and development has made **Giovenzana** the undisputed leader in its field. The range includes: pit bottom push button stations, recall drive control units and inspection boxes.

LIFTING EQUIPMENT

Lifting equipment comprises of single and double row pendant stations up to 14 gang for control and direct switching power circuits, reversing switches, worm screen and rotary limit switches, slip rings, horns, festoon systems and conductor rails.





QUALITY

Giovenzana, leader in the elevator and lifting equipment field, has gained a prominent position in the automation sector with their launch of industrial control accessories into the market. For many years, all commercial and industrial operations are integrated within the frame of the UNI EN ISO 9001:2008 quality system.

CSQ certificate N 9105. GIOV.

Giovenzana has fulfilled its commitment to the quality of its products since 1995. The quality system is the end users guarantee that all production stages are maintained under strict control and adhere to the requirements set by the company both in terms of customer expectations and compliance to the relevant international standards as proved by the various certificates **Giovenzana** holds for its products. With the certification UNI EN ISO 14001:2004, **Giovenzana** keeps up with new technologies in order to reduce the consumption of raw materials, energy and natural resources and to minimize refuse and emissions in hopes of progressively reducing negative impacts on the environment, **Giovenzana products are in conformity to directives Rohs, Pfos, Raee and Reach.**

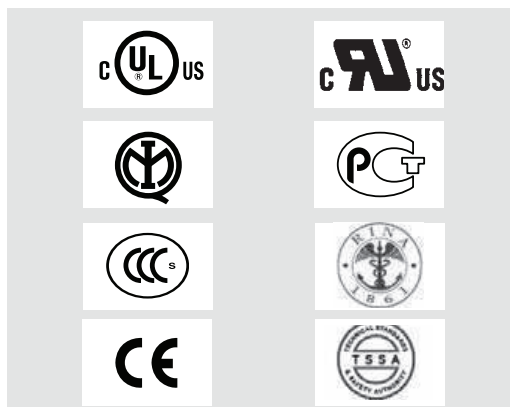
The certification CSQ N 9191. GIBV

COMPLIANCE

All **Giovenzana** products are manufactured according to the relevant Cee directives. **Giovenzana** certifies this compliance with a declaration of conformity.

CERTIFICATIONS

In order to reach the high level of quality **Giovenzana's** products achieve, they are tested by multiple third parties. In order to obtain the UL mark, **Giovenzana** submits their products to be tested by Underwriter Laboratories Inc., one of the most prestigious independent certification companies in the world.



GIOVENZANA INTERNATIONAL B.V.

Certifications

CEE DIRECTIVES

As of January 1, 1997 it is compulsory to CE mark all electromechanical products: this has been outlined by two important regulations: 72/23 CEE and 93/68 CEE Low Voltage Directives.

CE MARK

European directives, applied to all national regulations, set the minimum requirements in term of safety of all electrical material sold within the EU. The compliance to these requirements is certified to the manufacturer by the CE mark placed on the products.

STANDARDS

Giovenzana's products comply with both the European EN and the American UL standards. These regulations, such as the EN 60024 (with regards to the safety requirements of the electrical circuits on board industrial machinery), define the characteristics, performance and use of the products.

EN EUROPEAN STANDARDS

The EN European standards usually originate from IEC International standards and are the result of the collaboration between CENELEC (European Committee for Electrotechnical Standardization) member countries. These standards cover and eliminate existing national standards that may be contradictory or out of date.





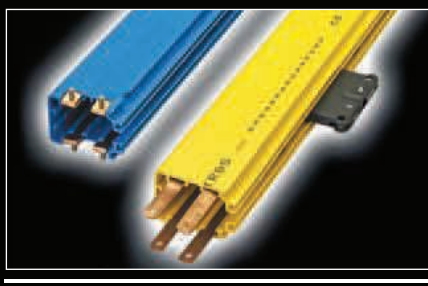
LIFTING EQUIPMENT

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- Limit switches FCR - FGR Series _____ pag. 33
- Slip rings - Warning horns AA Series _____ pag. 39
- Energy transmission 28 - 30 - 41 Series - Wire rope-i-beam - TR85 Trolley _____ pag. 45
- Conductors of energy transmission CP-CT Series _____ pag. 74
- Complementary products _____ pag. 76

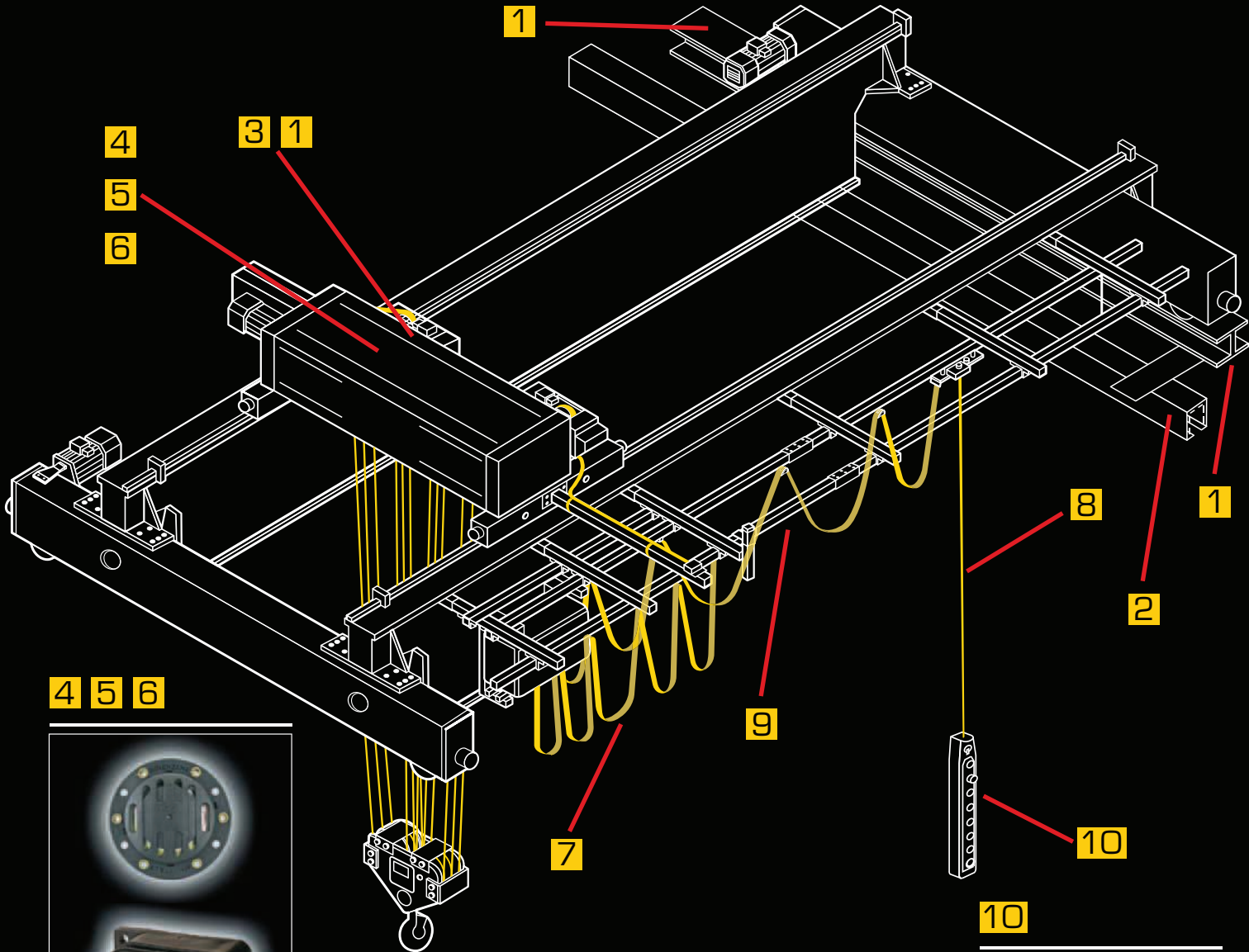
1



2



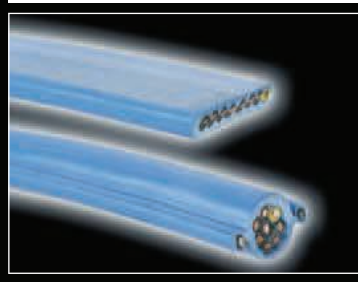
3



4 5 6



7 8



9



10



Lifting equipment

Pendant stations

P02 - PTRM - P03 - PL - PLB - DC16 - DC30 - TLP Series

Table of contents



TECHNO-LIFTING EQUIPMENT



Pendant stations for small hoist application for control circuits, in both single or double row version for control circuits and direct switching power circuits, for tail lift control.

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Pendant stations

P02 - PTRM - P03 - PL - PLB - DC16 - DC30 - TLP Series

Characteristics

GENERAL CHARACTERISTICS

Giovenzana International Company, leader in lifting equipment control, made a wide range of standard products for all installation requirements with actual specification and safety guidelines. The Lift Equipments products serie are classified as: Giovenzana International Company, made a wide range of standard products for all installation requirements with actual specification and safety guidelines. The Lift Equipment products serie are classified as: IEC 947-5-1, EN60947-5-1, UL508 and job: IEC 204-1, EN60204-1, EN ISO 13850 comply with achieved according to the needs and requirements operator are classified in 5 Product Family:

- Small hoist application
- For auxiliaries circuits
- Direct command
- Bower circuit
- Push button station for tail lifts

All operators are colored or symbology in laser engraving comply with EN60204-1 e FEM 9.941

CERTIFICATIONS:

The pendant stations P02, P03, PL e PLB Series are Certificated cUL.

Pendant stations

P02-PTRM Series pendant stations for small hoist applications
IP65 □



TECHNO-LIFTING EQUIPMENT

P02

2 directions
mechanically interlocked



ENGRAVING



DESCRIPTION

For single speed motor control
n° 2 push buttons with 1 NO contact
n° 2 push buttons with 2 NO contact
n° 2 push buttons with 1NC+1NO contact

For two-speeds motor control
n° 2 push buttons with NO contacts

For 1kW single-phase motor control
n° 2 push-buttons with
1NC+1NO contacts blocks

CODE

P02.1

P02.2

P02.4

P02.D2

P02.CD

WEIGHT gr

230

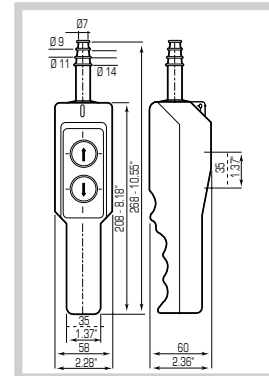
250

250

250

230

DIMENSIONS



Code P02K, Enclosures in kit for contact blocks and operators, see codes to page 19
for assembly instructions see page 15

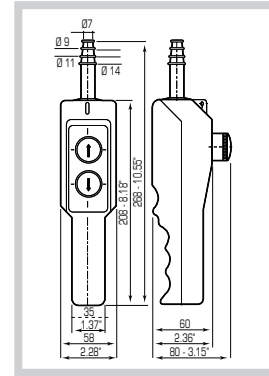


For single speed motor control
n° 1 emergency stop
EN ISO 13850
mushroom Ø 30
turn to release

n° 1 two way and
off switch with
spring return
16A - 250V ac 1/2 HP

P02.RM

230



PTRM



ENGRAVING



DESCRIPTION

For single speed motor control
Arranged execution for
capacitor 45X90 Ø Max

n° 1 emergency stop EN ISO 13850
mushroom Ø 30
turn to release

n° 1 two way
and off switch
with spring return
16A - 250V ac 1/2 HP

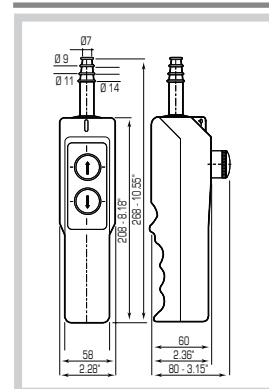
CODE

PTRM

WEIGHT gr

230

DIMENSIONS



Pendant stations

P03 Series pendant stations for small hoist applications

IP65

P03

2 directions
mechanically interlocked



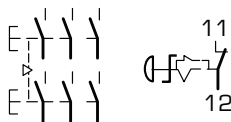
ENGRAVING



DESCRIPTION

For single speed motor control
n° 1 emergency stop EN ISO 13850
mushroom Ø 30
turn to release with:

n° 2 push buttons with 1 NO contact
n° 2 push buttons with 2 NO contacts
n° 2 push buttons with 3 NO contacts



CODE

P03.1

P03.2

P03.3

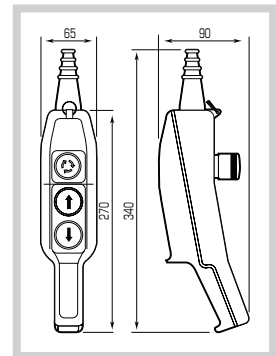
WEIGHT gr

440

450

460

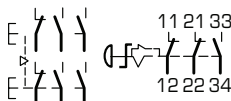
DIMENSIONS



For 1kW single-phase
motor control

n° 1 emergency stop EN ISO 13850
mushroom Ø 30
turn to release with:

n° 2 push buttons with 2 NO+1NC contacts



P03CD

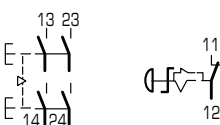
460

Code P03K, Enclosures in kit for contact blocks and operators, see codes to page 19
for assembly instructions see page 15



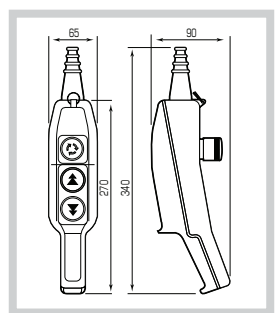
For double-speeds motor control
n° 1 emergency stop EN ISO 13850
mushroom Ø 30
turn to release with:

n° 2 push buttons with 2 NO contacts



P03D2

460



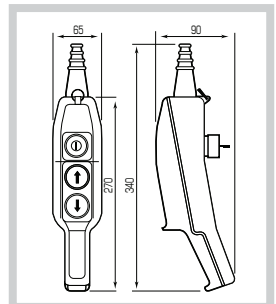
For single-speed motor control
n° 1 key switch
O-1 90° switching with:

n° 1 push buttons with 1 NO contact
n° 2 push buttons with 1 NO contact



P03CH

460



Pendant stations

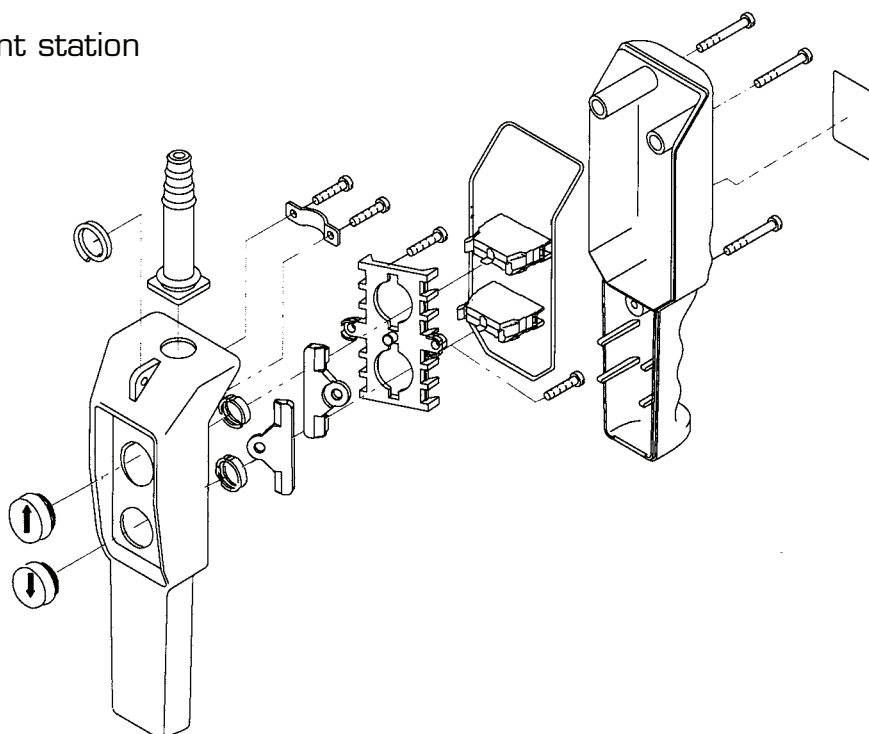
P02-P03 Series pendant stations for small hoist applications
Mounting drawing



TECHNO-LIFTING EQUIPMENT

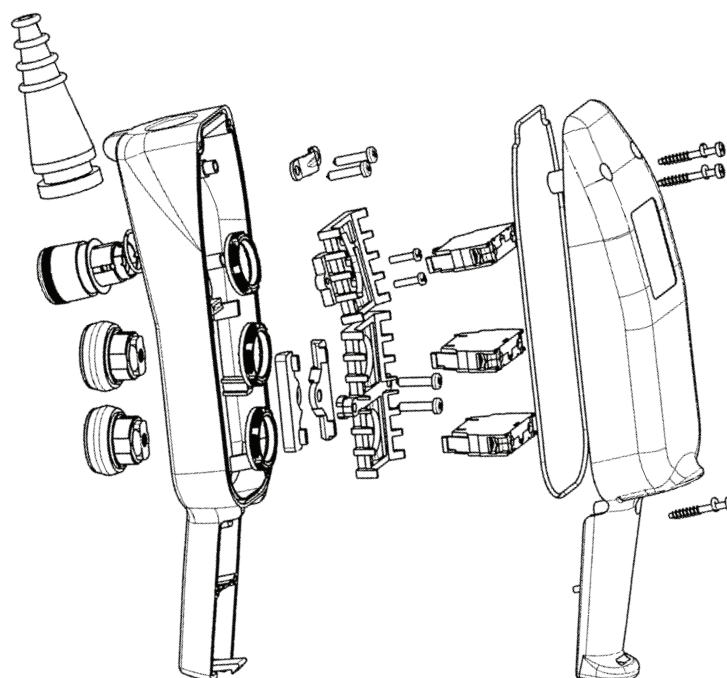
P02 SERIES

P02 Pendant station



P03 SERIES





P03 Pendant station

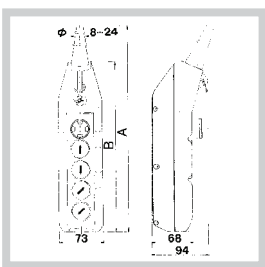


Pendant stations

PL Series pendant stations for control circuits

Single row IP65 ☐

	N° PUSH BUTTONS	DESCRIPTION	CODE	WEIGHT gr	
	4+1	For single-speed motor control 4 mechanically interlocked between pairs + n° 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	PL05	560	
	4+1	For two-speeds motor control ▶▶ 4 mechanically interlocked between pairs + n° 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	N° of 2 speeds movements		
			2	PL05D2	590
			4	PL05D4	620
	6+1	For single-speed motor control 6 mechanically interlocked between pairs + n° 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	PL07	740	
	6+1	For two-speeds motor control ▶▶ 6 mechanically interlocked between pairs + n° 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	N° of 2 speeds movements		
			2	PL07D2	770
			4	PL07D4	800
		6	PL07D6	830	
	6+2	For single-speed motor control 6 mechanically interlocked between pairs + 1 start/allarm + 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	PL08	830	
	6+2	For two-speeds motor control ▶▶ 6 mechanically interlocked between pairs + 1 start/allarm + 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	N° of 2 speeds movements		
			2	PL08D2	860
			4	PL08D4	890
		6	PL08D6	920	
	8+2	For single-speed motor control 8 mechanically interlocked between pairs + 1 start/allarm + 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	PL10	990	
	10+2	For single-speed motor control 10 mechanically interlocked between pairs + 1 start/allarm + 1 emergency stop EN ISO 13850 mushroom Ø 30 turn to release	PL12	1.140	



DIMENSIONS

N° PUSH BUTTONS	CODE	Amm	Bmm
5	PL05	345	288
7	PL07	495	358
8	PL08	530	393
10	PL10	640	463
12	PL12	710	533

Per la configurazione grafica e simbologia dei tasti vedi pag. 20-21
Push buttons colours:

☐ Black and White

■ Start/Alarm green

■ Emergency Red

■ For the push buttons designation and symbols please see pag. 20-21





Pendant stations

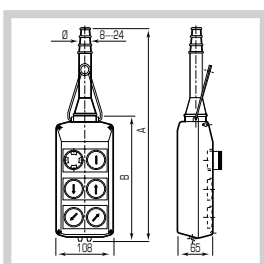
PLB Series pendant stations for control circuits

Double row IP65



TECHNO-LIFTING EQUIPMENT

	N° PUSH BUTTONS	DESCRIPTION	CODE	WEIGHT gr
	2+2	For single-speed motor control 2 Mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB04	560
	2+2	For two-speeds motor control 2 Mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB04D2	590
	4+2	For single-speed motor control 4 Mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB06	560
	4+2	For two-speeds motor control 4 Mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB06D2	690
			■ PLB06D4	720
	6+2	For single-speed motor control 6 Mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB08	840
	6+2	For two-speeds motor control 6 Mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB08D2	870
			■ PLB08D4	900
			■ PLB08D6	1.030
	8+2	For single-speed motor control N° mechanically interlocked between pairs + 1 Start/Alarm + N° 1 Emergency stop EN ISO 13850 mushroom Ø 30 turn to release	■ PLB10	1.150
	10+2		■ PLB12	1.270
	12+2		■ PLB14	1.390



DIMENSIONS

N° PUSH BUTTONS	CODE	Amm	Bmm
4	PLB04	345	185
6	PLB06	399	239
8	PLB08	453	293
10	PLB10	547	347
12	PLB12	601	401
14	PLB14	655	455

For the push buttons designation and symbols please see pag. 20-21
Push buttons colours:

■ Black and White

■ Start/Alarm Green

■ Emergency Red

■ For the push buttons designation and symbols please see pag. 20-21

Pendant stations

PL-PLB Series pendant stations for control circuits

IP65 Enclosures

PL - SINGLE ROW



DESCRIPTION	CABLE ENTRY Ø	CODE	WEIGH gr	MIN. PACK QTY.	DIMENSIONS		
Pendant station with 5 holes	7...18	PL05K	410	1			
Pendant station with 7 holes		PL07K	540	1			
Pendant station with 8 holes		PL08K	600	1			
Pendant station with 10 holes	9...21	PL10K	700	1	N° FORI	A	B
Pendant station with 12 holes		PL12K	800	1	5	345	288
					7	495	358
					8	530	393
					10	640	463
					12	710	533

PLB - DOUBLE ROWS



DESCRIPTION	CABLE ENTRY Ø	CODE	WEIGH gr	MIN. PACK QTY.	DIMENSIONS		
Pendant station with 4 holes	9...21	PLB04K	410	1			
Pendant station with 6 holes		PLB06K	510	1			
Pendant station with 8 holes		PLB08K	610	1			
Pendant station with 10 holes	12...24	PLB10K	710	1	CABLE ENTRY Ø	A	B
Pendant station with 12 holes		PLB12K	810	1	4	345	185
					6	399	239
					8	453	293
					10	547	347
Pendant station with 14 holes		PLB14K	910	1	12	601	401
					14	655	455

With kit Enclosures are include:

- Pendant stations (box, screws, gasket)
- Cable sleeve
- Cable clamp
- Suspension ring
- Push button interlock

Not included:

- Contact block
- Push buttons

This components must be purchased separated.

See pag. 19

Assembly:

For assembly instruction see pag. 22 - 23

Pendant stations

For control and direct switching power circuits
Accessories



TECHNO-LIFTING EQUIPMENT

CONTACT BLOCKS



1 NC	PL004001
1 NO	PL004002

MULTI-SPEED CONTACT BLOCKS



A 2 VEL. NO+NO 1NO+1NO	PL004010
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LAMP HOLDERS



BA9s	PL004007
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LENS CAP



1 2	PL00800.
3 4 5	

KEY SWITCH



0-1	PL006001
1-0-2	PL006002

ROTARY SWITCH



0-1	PL007001
1-0-2	PL007002

MUSHROOM OPERATOR Ø 30 TURN TO RELEASE EN ISO 13850



WITH VISION	PL013001
STANDARD	PL013002

MUSHROOM OPERATOR Ø 40



PL013003

PUSH BUTTON

COLOUR	CODE
	PL005034
	PL005035
	PL005036
	PL005037
	PL005038
With engraving	PL0050...*

	PL005034
	PL005035
	PL005036
	PL005037
	PL005038
With engraving	PL0050...*

* See pag. 21



COUPLING PLATE



2 HOLES	PL003001
3 HOLES	PL003002

INTERLOCK



TOP	PL011001
BOTTOM	PL011002

CABLE CLAMP LEVER



PL012001

CABLE SLEEVE

VERSION

P02 - PTRM For cable Ø 7...14
P03 - PLO5 For cable Ø 7...18
PL07...PL12 PLB04-PLB06 For cable Ø 9...21
PLB08-PLB14 For cable Ø 12...24

CODE

12906011
12906006
12906004
12906005



Pendant stations

PL-PLB Series for control and direct switching power circuit Composition

PL SERIES STANDARD VERSIONS			PL07	PL08	PL08D2	PL08D4	PL08D6	PL10	PL12
PL05	PL05D2	PL05D4	STOP 	START 	START 	START 	START 	START 	START
STOP 	STOP 	STOP 	LIFT UP 	STOP 	STOP 	STOP 	STOP 	STOP 	STOP
LIFT UP 	1-2 SPEED LIFT 	1-2 SPEED LIFT 	LIFT DOWN 	LIFT UP 	LIFT UP 	1-2 SPEED LIFT 	1-2 SPEED LIFT 	LIFT UP 	LIFT UP
LIFT DOWN 	1-2 SPEED LIFT 	1-2 SPEED LIFT 	O/H CRANE FORWARD 	LIFT DOWN 	LIFT DOWN 	1-2 SPEED LIFT 	1-2 SPEED LIFT 	LIFT DOWN 	LIFT DOWN
HOIST RIGHT 	HOIST RIGHT 	1-2 SPEED HOIST 	O/H CRANE REVERSE 	O/H CRANE FORWARD 	O/H CRANE FORWARD 	1-2 SPEED O/H CRANE 	1-2 SPEED O/H CRANE 	O/H CRANE FORWARD 	LIFT UP FAST
HOIST LEFT 	HOIST LEFT 	1-2 SPEED HOIST 	HOIST RIGHT 	O/H CRANE REVERSE 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE 	1-2 SPEED O/H CRANE 	O/H CRANE REVERSE 	LIFT DOWN FAST
			HOIST LEFT 	HOIST RIGHT 	HOIST RIGHT 	HOIST RIGHT 	1-2 SPEED HOIST 	O/H CRANE FORWARD FAST 	O/H CRANE FORWARD
				HOIST LEFT 	HOIST LEFT 	HOIST LEFT 	1-2 SPEED HOIST 	REVERSE FAST 	REVERSE
								HOIST RIGHT 	FORWARD FAST
								HOIST LEFT 	O/H CRANE REVERSE FAST
									HOIST RIGHT
									HOIST LEFT

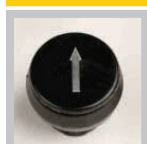
PLB SERIES STANDARD VERSIONS				PLB06D4		PLB08D4		PLB14		PLB10	
PLB04		PLB04D2		START 	STOP 	START 	STOP 	START 	STOP 	START 	STOP
LIFT UP 	LIFT DOWN 	1-2 SPEED LIFT UP 	1-2 SPEED LIFT DOWN 	1-2 SPEED UP 	1-2 SPEED DOWN 	START ALARM 	STOP 	UP FAST 	DOWN FAST 	LIFT UP 	LIFT DOWN
START 	STOP 	START 	STOP 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	START ALARM 	STOP 	LIFT UP 	LIFT DOWN 	UP FAST 	DOWN FAST
LIFT UP 	LIFT DOWN 	LIFT UP 	LIFT DOWN 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	UP FAST 	DOWN FAST
O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	START ALARM 	STOP 	HOIST LEFT 	HOIST RIGHT 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	UP FAST 	DOWN FAST
START ALARM 	STOP 	START ALARM 	STOP 	LIFT UP 	LIFT DOWN 	START ALARM 	STOP 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	LIFT UP 	LIFT DOWN
LIFT UP 	LIFT DOWN 	LIFT UP 	LIFT DOWN 	O/H CRANE UP FAST 	O/H CRANE DOWN FAST 	1-2 SPEED UP 	1-2 SPEED DOWN 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	O/H CRANE FORWARD 	O/H CRANE REVERSE
O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE UP 	1-2 SPEED O/H CRANE DOWN 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	O/H CRANE FORWARD 	O/H CRANE REVERSE
HOIST LEFT 	HOIST RIGHT 	HOIST LEFT 	HOIST RIGHT 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	HOIST LEFT 	HOIST RIGHT 	HOIST LEFT 	HOIST RIGHT
HOIST LEFT 	HOIST RIGHT 	HOIST LEFT 	HOIST RIGHT 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	O/H CRANE LEFT 	O/H CRANE RIGHT 	O/H CRANE LEFT 	O/H CRANE RIGHT
HOIST LEFT 	HOIST RIGHT 	HOIST LEFT 	HOIST RIGHT 	O/H CRANE FORWARD 	O/H CRANE REVERSE 	1-2 SPEED O/H CRANE FORWARD 	1-2 SPEED O/H CRANE REVERSE 	O/H CRANE LEFT 	O/H CRANE RIGHT 	HOIST LEFT 	HOIST RIGHT
HOIST LEFT 	HOIST RIGHT 	HOIST LEFT 	HOIST RIGHT 	HOIST LEFT 	HOIST RIGHT 	1-2 SPEED O/H CRANE LEFT 	1-2 SPEED O/H CRANE RIGHT 	O/H CRANE LEFT FAST 	O/H CRANE RIGHT FAST 	HOIST LEFT 	HOIST RIGHT

Pendant stations

P02-P03-PL-PLB Series for auxiliaries power circuits
Engravings push button



TECHNO-LIFTING EQUIPMENT



PUSH BUTTONS WITH SIMBOLS FEM 9.941 Standard

UP	DOWN	FORWARD	REVERSE	LEFT	RIGHT	SPIN LEFT	SPIN RIGHT	GREEN START	GREEN START ALARM
PL005004	PL005019	PL005012	PL005027	PL005023	PL005008	PL005031	PL005016	PL005001	PL005002
PL005005	PL005020	PL005013	PL005028	PL005024	PL005009	PL005032	PL005017	PL005003	PL005034
PL005006	PL005021	PL005014	PL005029	PL005025	PL005010	PL005033	PL005018	PL005035	PL005036
								PL005037	PL005038

LASER ENGRAVING: Optional engravings can be made to order according to special customer specification (min. quantity applies)

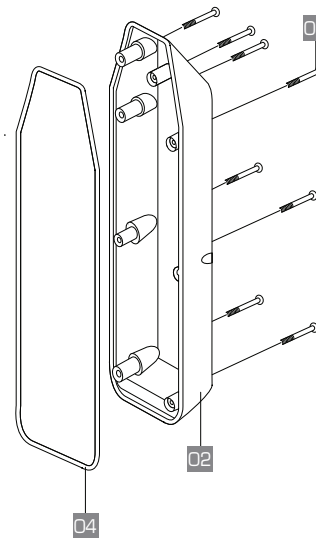
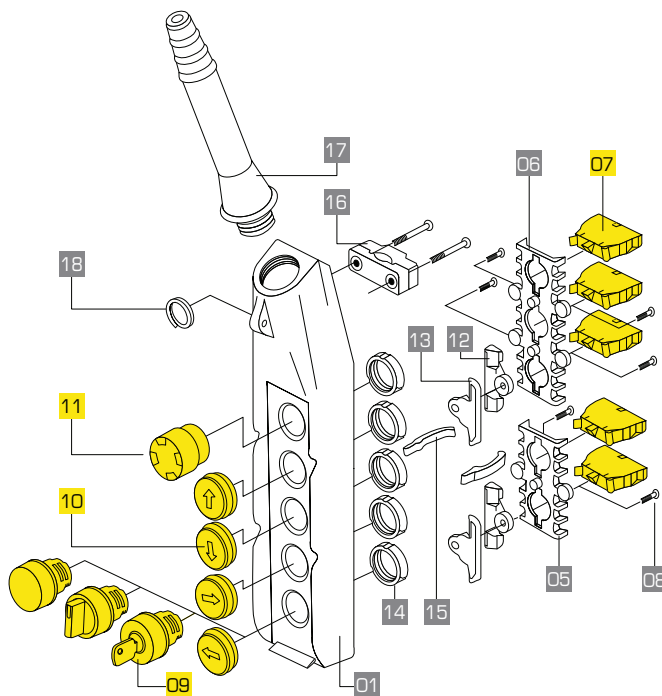
Pendant stations

PL Series for auxiliary controls and direct switching power circuits
Assembly

PL SERIES STANDARD VERSIONS

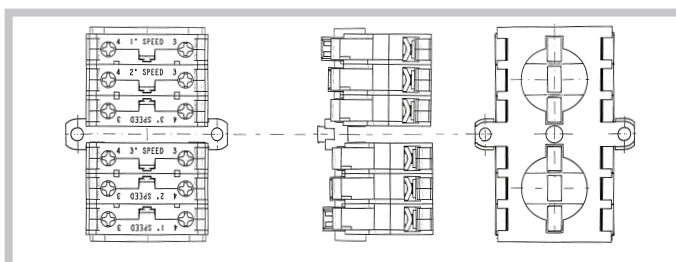
PL - P02 - P03 Single row

Note: For execution "empty enclosures in kit", the parts "yellow underline" 07, 09, 10 and 11 will must be order separatly.



ASSEMBLY INSTRUCTION FOR 1^a - 2^a SPEED CONTACT BLOCKS

PL004010	PL004003 1 ^a speed
	PL004004 2 ^a speeds



N°	REF. NO.	DESCRIPTION	QTY.
01	PL00100.	SINGLE ROW PENDANT STATION COVER...PUSH BUTTONS	1
02	PL00200.	DOUBLE ROW PENDANT STATION BASE...PUSH BUTTONS	1
03	11606022	SELF TAPPING STAINLESS STEEL INOX SCREW 4X30	..
04	11901028	RUBBER GASKET Ø 2,5	MT..
05	PL003001	2-HOLES CONTACT BLOCKS SUPPORT	..
06	PL003002	3-HOLES CONTACT BLOCKS SUPPORT	..
	PL004001	1 NC CONTACT BLOCK	..
07	PL004002	1 NO CONTACT BLOCK	..
	PL004010	2 SPEEDS 1NO+1NO CONTACT BLOCK	..
	PL004007	LAMP HOLDER	..
08	11607007	SELF TAPPING SCREW 3,9X13	..
	PL00700.	ROTARY SWITCH	..
09	PL00600.	KEY SWITCH	..
	PL00800.	PILOT LIGHT	..
10	PL0050..	ENGRAVED PUSH BUTTONS	..
11	PL013001	MUSHROOM OPERATOR TURN TO RELEASE WITH VISION	1
12	PL011002	BOTTOM MECHANICAL INTERLOCK	..
13	PL011001	TOP MECHANICAL INTERLOCK	..
14	11705100	M. 22 ZAMA LOCK NUTS	..
15	PL012001	CABLE CLAMP LEVER	..
16	12904014	COMPLETE CABLE CLAMP	1
	12906006	PL05 CABLE SLEEVE	..
	12906004	PL07 - PL08 CABLE SLEEVE	..
	12906005	PL10 - PL12 CABLE SLEEVE	..
18	12003009	SUNSPENSION RING	1

Pendant stations

PLB Series for auxiliary controls and direct switching power circuits
Assembly



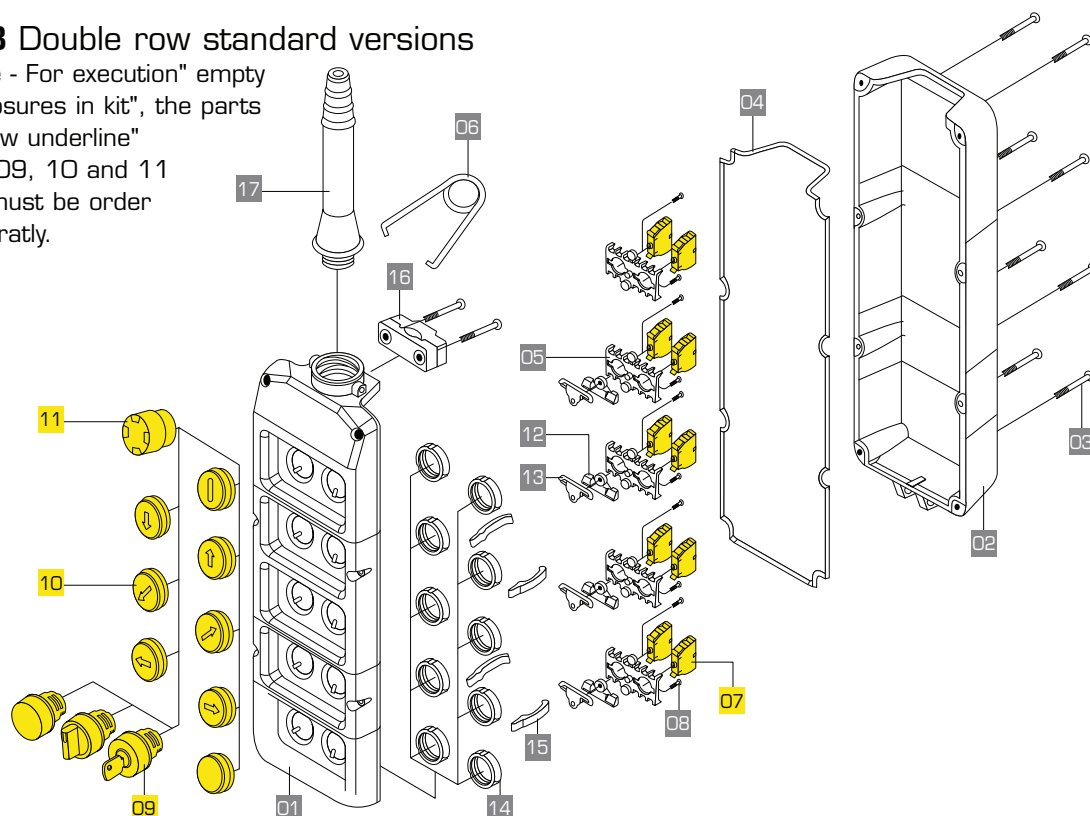
TECHNO-LIFTING EQUIPMENT

PLB SERIES STANDARD VERSIONS

PLB Double row standard versions

Note - For execution "empty enclosures in kit", the parts "yellow underline" will must be order separately.

07, 09, 10 and 11



N°	REF. NO.	DESCRIPTION	QTY.
01	1170807.	DOUBLE ROW PENDANT STATION COVER....PUSH BUTTONS	1
02	1171004.	DOUBLE ROW PENDANT STATION BASE....PUSH BUTTONS	1
03	11606022	SELF TAPPING STAINLESS STEEL INOX SCREW 4X30	..
04	11901035	RUBBER GASKET Ø 2	MT..
05	PL003001	2 - HOLES CONTACT BLOCKS SUPPORT	..
06	12001021	SUNSPENSION RING	1
	PL004001	1 NC CONTACT BLOCK	..
	PL004002	1 NO CONTACT BLOCK	..
07	PL004010	2 SPEEDS 1NO + 1NO CONTACT BLOCK	..
	PL004007	LAMP HOLDER	..
08	11607007	SELF TAPPING SCREW 3,9X13	..
	PL00700..	ROTARY SWITCH	..
09	PL00600..	KEY SWITCH	..
	PL00800..	PILOT LIGHT	..
10	PL0050...	ENGRAVED PUSH BUTTONS	..
11	PL013001	MUSHROOM OPERATOR TURN TO RELEASE WITH VISION	1
12	PL011002	BOTTOM MECHANICAL INTERLOCK	..
13	PL011001	TOP MECHANICAL INTERLOCK	..
14	11705100	M. 22 ZAMA LOCK NUTS	..
15	PL012001	CABLE CLAMP LEVER	..
16	12904008-09	COMPLETE CABLE CLAMP	1+1
	12906004	PLB04 - 06 - 08 CABLE SLEEVE	..
17	12906005	PLB10 - 12 - 14 CABLE SLEEVE	..

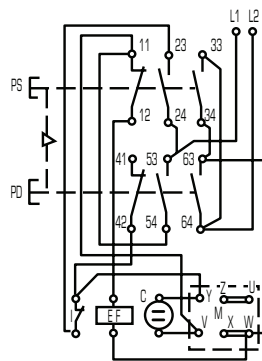
Pendant stations

DC16 Series pendant station for power circuits

IP65 Direct switching

GENERAL CHARACTERISTICS

- Protection rating according to IEC/EN 60947-5-1
- Double insulated ABS
- Enclosures IP65 IEC/EN60529
- Contact blocks IP20 with screw connection
- 2 Directions mechanically interlocked
- Push buttons with laserable engraving
- Cable entry with M25 cable clamp
- Rated insulation voltage U_i 500V (U_i 690V)
- Rated thermal current I_{th} 16A
- Rated operating power: 400V ac -1kW



SCHEME OF DIRECT SWITCHES FOR MONOPHASE POWER 1KW

PS Push button up

PD Push button down

I Stroke end switch up

M Power

C Condensator

EF Electro-brake

2 directions mechanically interlocked	ENGRAVING	DESCRIPTION	CODE	WEIGHT gr	DIMENSIONS
		FOR SINGLE PHASE 1-SPEED POWER CIRCUITS n° 1 Emergency stop mushroom Ø 30 turn to release with 2NC + 1NO with:	DC16	470	
		N° 2 push buttons with 2NO+1NC			
		FOR SINGLE PHASE 1-SPEED POWER CIRCUITS n° 1 Emergency stop mushroom Ø 30 turn to release 2NC contact blocks with:	DC16.I	490	
		N° 2 push buttons with 2NO+1NC			

Pendant stations

DC30 Series pendant station for power circuits





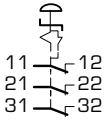






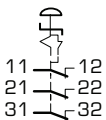
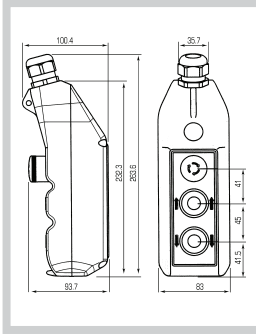





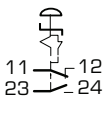

IP65 Direct switching



TECHNO-LIFTING EQUIPMENT

GENERAL CHARACTERISTICS




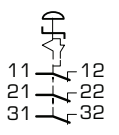
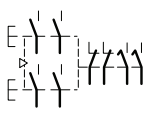
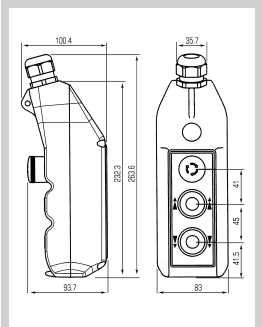
- Protection rating according to IEC/EN 60947-5-1
- Double insulated ABS
- Enclosures IP65 IEC/EN60529
- Contact blocks - slow open double interruption - snap action
- 2 Directions mechanically interlocked
- Push buttons with laserable engraving
- Cable entry with M25 cable clamp
- Rated insulation voltage U_i 500V
- Rated thermal current I_{th} 25A
- Rated operating power: 1phase - 2poles 230...400V ac - 2,2kW 230...400V kW 2,2
3phase -3poles 230...400V kW 4

2 directions mechanically interlocked	ENGRAVING	DESCRIPTION	CODE	WEIGHT gr	DIMENSIONS
	   	<p>FOR SINGLE-THREE PHASES 1-SPEED POWER CIRCUIT</p> <p>n°1 Emergency stop mushroom Ø 30 turn to release with:</p> 	DC30	600	
		<p>n° 2 push buttons with 3NO+1NC</p> 			
	   	<p>FOR SINGLE-THREE PHASES 1-SPEED POWER CIRCUIT</p> <p>n°1 Emergency stop mushroom Ø 30 turn to release with:</p> 	DC30.RG	600	
		<p>n° 2 push buttons with 4NO</p> 			
	   	<p>FOR SINGLE-THREE PHASES 1-SPEED POWER CIRCUIT</p> <p>n°1 Emergency stop mushroom Ø 30 turn to release with:</p> 	DC30.GE	600	
		<p>n° 2 push buttons with 3NO+1NC</p> 			

Pendant stations





DC30 Series for power circuit

IP65 Direct switching - DC16-DC30 Accessories






	ENGRAVING	DESCRIPTION	CODE	WEIGHT gr	DIMENSIONS
2 directions mechanically interlocked	  	PER COMANDO DIRETTO PER MOTORI A 2 VELOCITÀ n°1 Emergency stop Mushroom Ø 30 turn to release with:  n° 2 push buttons with 2NO+2NC 	DC30D2	650	

DC16 SERIES ACCESSORIES

DC16-DC30 SERIES ACCESSORIES

CONTACT BLOCK SCREW CONNECTION	PUSH BUTTON	EMERGENCY STOP MUSHROOM OPERATOR Ø30 TURN TO RELEASE
 NC 1 — 2 PLO04001 NO 3 — 4 PLO04002 	 Up Down PLO05004 PLO05019	 PPFN1R3NX

DC30 SERIES ACCESSORIES

CONTACT BLOCKS	RUBBER KEY
	
FOR SINGLE SPEED - REVERSING MOTORS	
 3NO+1NC	CODE FOR
	30205085 DC30
	DC30.GE
 4NO	30205087 DC30.RG
TWO-SPEEDS REVERSING MOTORS	
 4NO (2NO+2NC progressive)	CODE FOR
	30205086 DC30D2
	COLOUR CODE
	Black 11901044
	White 11901046

Pendant stations

For auxiliary power circuit

Schemes

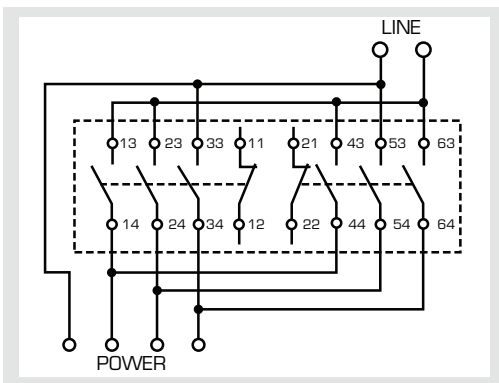


TECHNO-LIFTING EQUIPMENT

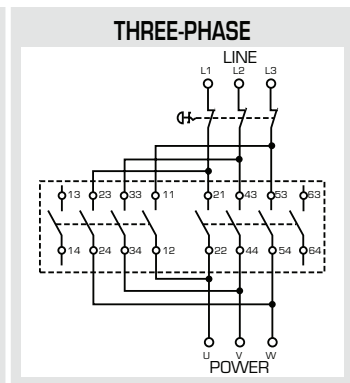
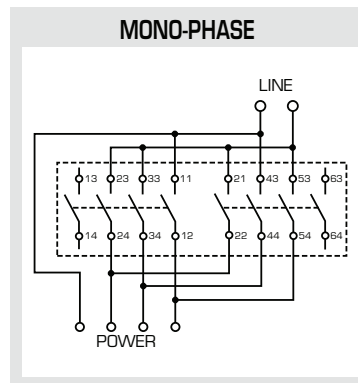
DROWINGS EXAMPLES

POWER CIRCUITS

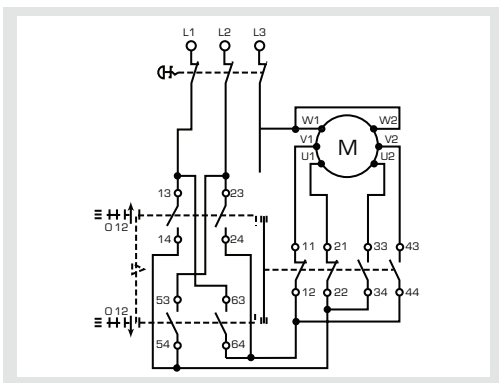
For single speed, 2 reversing motor.
Contact block 3NO+1NC



For single speed, 2 reversing motor.
Contact block 4NO

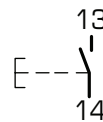


For double speed, 2 reversing motor.
Contact blocks

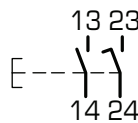


AUXILIARIES CIRCUIT

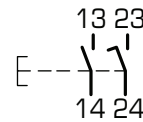
1 SPEED



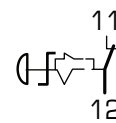
SNAP ACTION



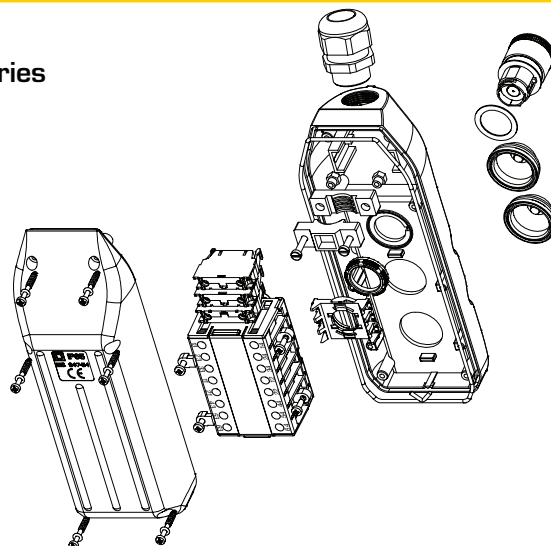
2 SPEEDS



EMERGENCY



EXPLODED VIEW DC16 - DC30 Series




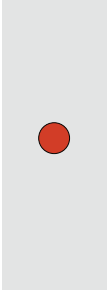
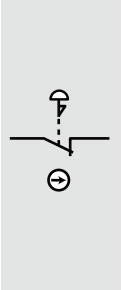
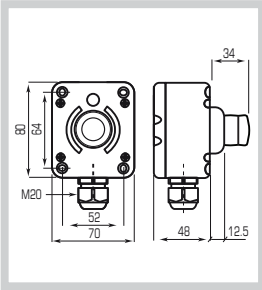

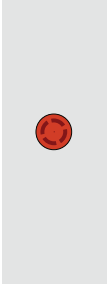
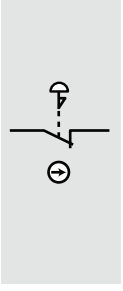
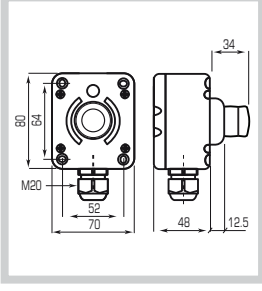

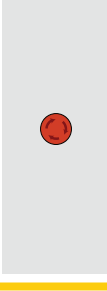
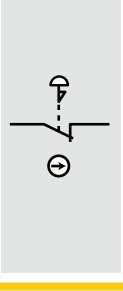
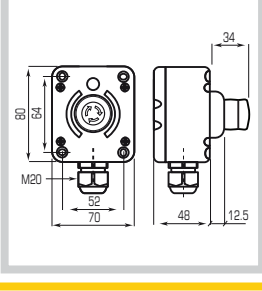

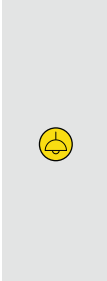

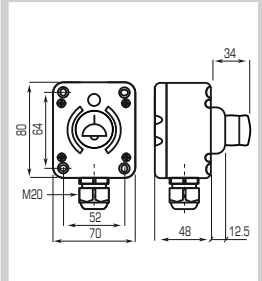
Pendant stations

TLP Light Series

IP65 □

GENERAL CHARACTERISTIC

- Lifting platform and tails lift application
- In conformity to IEC/EN 60947-5-1, UNI EN 1570
- Box in thermoplastic - Shock and heat resistance
- IP65 Double insulation IEC/EN60529
- Contact blocks IP20 with spring connection
- Two directions mechanically interlocked
- Push buttons laser engraving
- Pendant or solid fixing
- Skin stop cable gland M20

	ENGRAVING	DESCRIPTION	SCHEMS	CODE	WEIGHT gr	DIMENSIONS
		Emergency EN ISO 13850 emergency stop Ø40 Push-pull with 1 contact block NC		TLP1.EPP	120	
		Emergency EN ISO 13850 emergency stop Ø40 Push-pull with vision with 1 contact block NC		TLP1.VPP	120	
		Emergency EN ISO 13850 emergency stop Ø40 Release with 1 contact block NC		TLP1.ESR	120	
		Alarm mushroom operator Ø40 momentary with 1 contact block NC		TLP1B.AL	120	




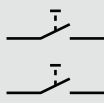
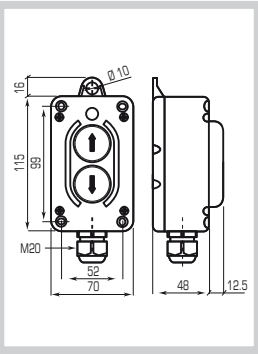




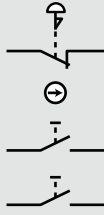
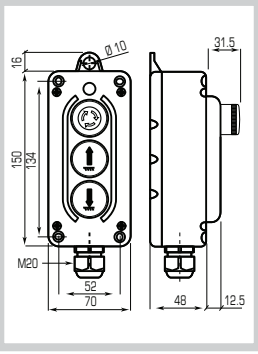




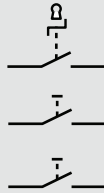
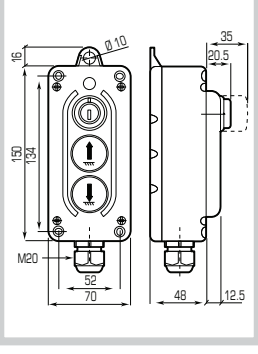




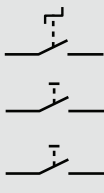
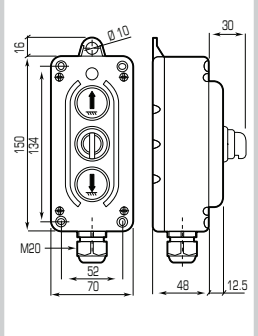
Pendant stations

TLP Light Series

IP65 








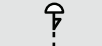
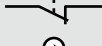
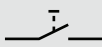
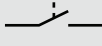
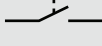
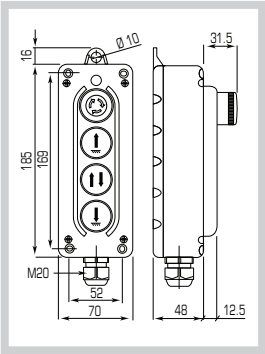






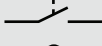



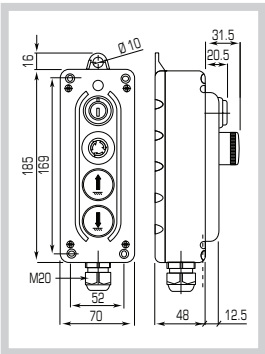





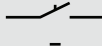
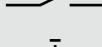
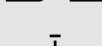
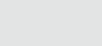
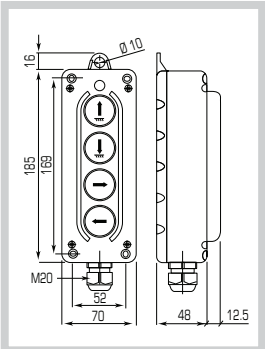
TECHNO-LIFTING EQUIPMENT

	ENGRAVING	DESCRIPTION	SCHEMI	CODE	WEIGHT gr	DIMENSIONS
	 	n° 2 push buttons up and down		TLP2	200	
	  	n°1 Emergency stop Ø30 twist to release with 1NC contact x button n° 2 push buttons up and down with 1NO contact x button		TLP3.B	255	
	  	n°1 key switch with 1NO contact x button n° 2 push buttons up and down with 1NO contact x button		TLP3.C	255	
	  	n°1 knob selector switch with 1NO contact x button n° 2 push buttons up and down with 1NO contact x button		TLP3.D	255	

Pendant stations


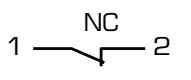


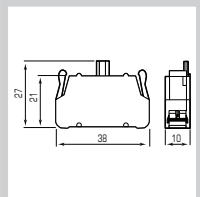
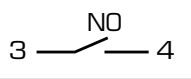

TLP Light Series

IP65

	ENGRAVING	DESCRIPTION	SCHEMS	CODE	WEIGHT gr	DIMENSIONS
	   	<p>n°1 Emergency stop Ø30 twist to release with 1NO for contact block</p> <p>n°3 push buttons up-common-down with 1NO for contact block</p>	    	TLP4.A	314	
	   	<p>n°1 key switch with 1NO for contact block</p> <p>n°1 Emergency stop Ø30 twist to release with 1NC for contact block</p> <p>n°2 push buttons up and down with 1NO for contact block</p>	    	TLP4.B	314	
	   	<p>n°4 push buttons with 1NO for contact block</p>	   	TLP4.C	314	

ACCESSORIES

SPRING CLAMP TERMINALS

	SCHEME	DESCRIPTION	CODE	WEIGHT gr	DIMENSIONS
		  0 1,5 6 mm	PCW01	10	
		 0 3,5 6 mm	PCW10	10	

Pendant stations

P02 - PTRM - P03 - DC16 - PL - DC30 - TLP Series

General and electrical characteristics



TECHNO-LIFTING EQUIPMENT

GENERAL CHARACTERISTICS

In conformity to standard rules	
Material group	
Pollution class	
Ambient temperature	°C
Climate resistance	part IEC 68
Cable entry:	rubber cable sleeve
	cable clamp

ELECTRICAL CHARACTERISTICS

CONTACT BLOCKS

Rated insulation voltage U_i	V
Rated thermal current U_{imp}	kV
Corrente nominale termica I_{th}	A
Frequency	Hz
Rated operating current I_e :	
AC-15: Alternate current	V
	PLO04. (PLO2-PLO3-PTRM-PL-DC16) A
	PCW. (TLP) A
DC-13: Direct current	V
	PLO04. (PLO2-PLO3-PTRM-PL-DC16) A
	PCW. (TLP) A
AC-3: Alternate current	1 phase - 2 poles 230V-400V kW
	3 phases - 3 poles 230V-400V kW
Conditional short circuit with current	A
Fuse rating gG	
Contact insulation resistance	mΩ
Switching mechanism	
Positive operation	
Terminal type	
Terminal capacity:	no.1 Flexible and solid conductor min-max mm ²
	no.2 Flexible and solid conductors min-max mm ²

UL508 CHARACTERISTICS

General use	600V ac A
	125V dc A
Code (HD) Heavy Duty	

P02 - PTRM - P03 DC16 - PL - PLB - TLP		DC30
IEC/EN60947-5-1		IEC/EN60947-3
II		II
3		3
Operating: - 25° + 70°C - storage - 30° + 70°C		
Climate resistance - 2-8 hot damp - 2-30 unsettled hot damp		
P02 - P03 - PTRM Ø7...18		Ø 7...14
PL Ø9...24		
DC16 M25 - TLP M20		M25
Rated insulation voltage U_i	690	500
Rated thermal current U_{imp}	4	4
Corrente nominale termica I_{th}	16	25
Frequency	50 (50/60 PCW.)	50
Rated operating current I_e :		
AC-15: Alternate current		
	24 60 110 230 400 440 500 690	
	16 12 8 6 4,5 3,5 1 1	-
	10 8 6 5 4 4 4 2	
DC-13: Direct current		
	24 48 60 110 220 250	
	2 1,2 0,85 0,4 0,25 -	-
	2 2 1 0,4 - 0,4	
AC-3: Alternate current		2,2
	-	3
Conditional short circuit with current	1000	1000
Fuse rating gG	gG 10A - 500V	aM 12A - 500V
Contact insulation resistance	≤25	-
Switching mechanism	slow break double gap contacts	
Positive operation	NC contact blocks ⊕	-
Terminal type	M3,5 screw (spring loaded*)	M3,5 screw
Terminal capacity:	1/2,5 (0,5/2,5*)	1/2,5
	1/2,5 (0,5/2,5*)	1/2,5
General use	10	-
	2,5	-
Code (HD) Heavy Duty	A600 - Q600	-

* TLP Series with spring loaded terminal contact blocks

Limit switches

FCR - FGR Series

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TECHNO-LIFTING EQUIPMENT



Rotary control switches with 300 mm rods from 3 up to 5 positions.
Control switches with rotary gear from 12 up to 200 rpm with 4 or 6 micro switches.

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FCR Series rotary limit switches
for control circuits

pag. 34




FGR Series rotary gear limit switch
for control circuit

pag. 36

Rotary limit switches





FCR Series for control circuits

IP65 

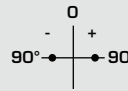
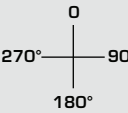
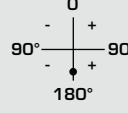
GENERAL CHARACTERISTICS

- According to IEC/EN 60947-3
- Self extinguishing thermoplastic housing VO UL 94
- IP65 Double insulation IEC/EN60529
- Assembled with $\square 6 \times 300$ mm in aluminum rods with position indicator "0"
- n°1 Cable entry $\varnothing 22,5$
- Ambient temperature : operating $-25^{\circ} +55^{\circ}$ C
storage $-30^{\circ} +70^{\circ}$ C

ELECTRICAL CHARACTERISTICS


- According to IEC/EN60947-3, UL508
 - Certifications:    
- | | |
|---|----------------|
| Rated insulation voltage U_i | 690V |
| Rated thermal current I_{the} | 16A |
| Frequency | 50/60 Hz |
| Rated thermal current: AC-21A - AC-22A | 690V-16A |
| AC23A - 3x3 | 230V-13A/4kW |
| | 400V-13A/7,5kW |
| Rated short circuit withstand current (gG 20A-690V) | 5kA |



POSITION	DESCRIPTION	CODE	N° DIAGRAM
FOR SINGLE SPEED MOTOR CONTROL			
	3 Positions with mechanical interlock	FCR001	1
	3 Positions with mechanical interlock	FCR002	2
	4 Positions - Rotary	FCR003	3
	4 Positions - Rotary	FCR004	4
	4 Positions - Rotary	FCR005	5
FOR TWO SPEEDS MOTOR CONTROL			
	5 Positions with mechanical interlock	FCR006	6

Rotary limit switches

FCR Series for control circuits

IP65 



TECHNO-LIFTING EQUIPMENT

SCHEMS

DIAGRAM 1

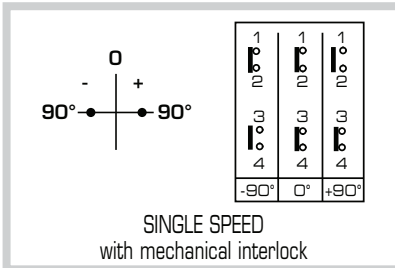


DIAGRAM 2

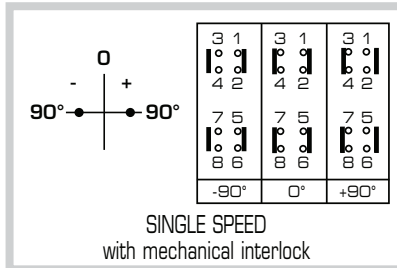


DIAGRAM 3

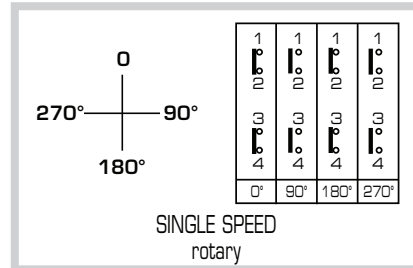


DIAGRAM 4

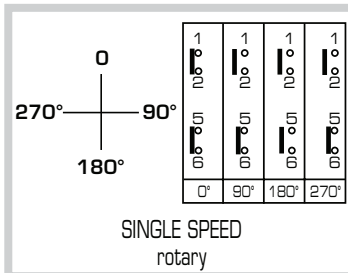


DIAGRAM 5

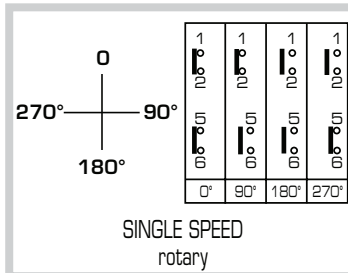
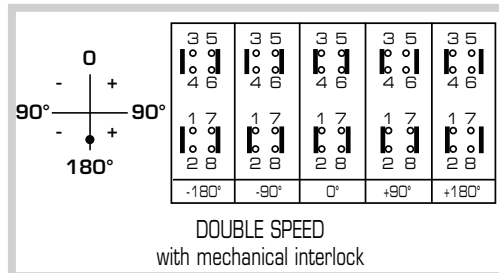


DIAGRAM 6

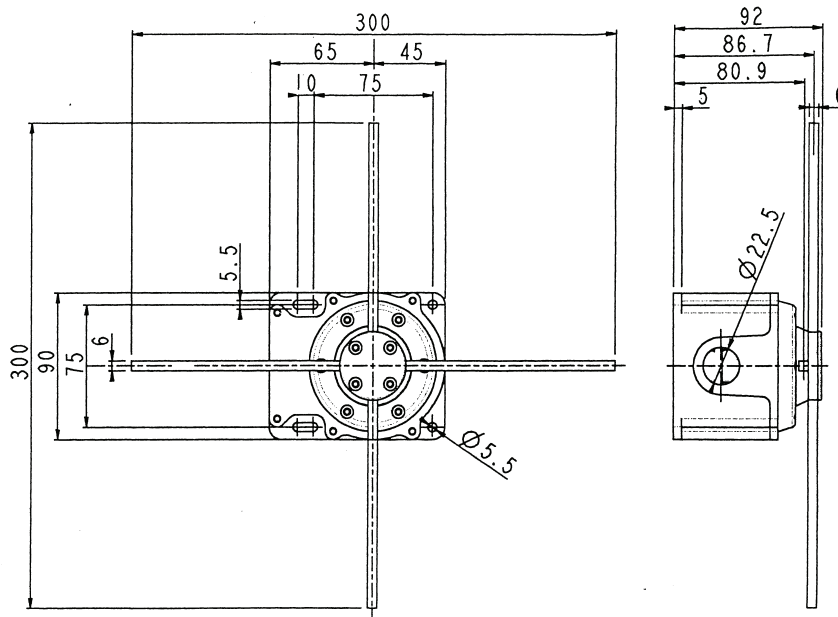


ANGULAR TRIPPING CONTACTS

CONTACT BLOCK NORMAL CLOSED



CONTACT BLOCK NORMAL OPEN



Rotary gear limit switches

FGR Series for control circuit

IP65

GENERAL CHARACTERISTICS


The series is directed towards control of turns of the rotating drums which wrap cables, machinery etc... Equipped with adjustable "micro" means a registry screw, lives independently on each one of the cam. Operating operating microswitches, permits, using a screwdriver, calibration of the race and then opening or closing of contacts according to functional needs. Available in two versions based FGR, standard FGR ... B shaft coaxial to use encoder.

GENERAL CHARACTERISTICS

- Certifications
- Housing with cast aluminum body with lid thermopolymer extinguishing VO UL 94
- Protection rating according IP65 IEC/EN 60529
- Drive shaft with steel worm plated mounted on ball bearings
- Cams and micrometric adjustment screws in PA
- Maximum number of operating contacts n.6 (6 cams)
- n. 2 Cable entries with M20 cable glands
- Operating temperature:

in use	-25°C + 70°C
storage	-30°C + 70°C

ELECTRICAL CHARACTERISTICS

- Comply with IEC/EN 61058-1, UL 1054
- Certifications: 
- Contact blocks μ 1 NC + 1NO changeover switch (C format) snap action contacts with positive opening NO contact \odot
- Self cleaning silver alloy contacts 0,8 x 6,3 mm
- Rated insulation voltage U_i 250V
- Rated thermal current I_{th} 8A
- Rated operating current:

resistive load	8A - 250V ac
inductive load	3A - 250V ac
- IEC/EN 61058-1 8(3)A-250V ac, UL 1054 8A - 250Vac

FGR - STANDARD VERSION



N° TURNS CAM/MOTORSHAFT REV RATIO	CODE		WEIGHT gr	MIN. PACK QTY.
	with 4 macro switches	with 6 macro switches		
1/12	FGR2006	FGR20066	1.100	1
1/33	FGR2007	FGR20076	1.100	1
1/50	FGR2008	FGR20086	1.100	1
1/100	FGR2009	FGR20096	1.100	1
1/200	FGR2010	FGR20106	1.100	1

Rotary gear limit switches

FGR Series for control circuit

IP65



TECHNO-LIFTING EQUIPMENT

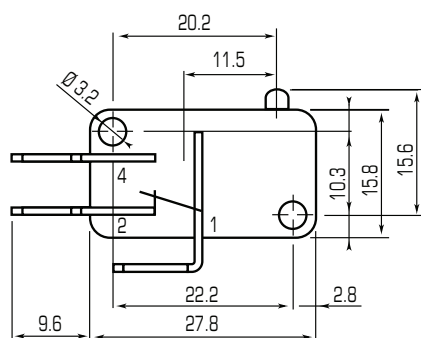
FGR.B. - COAXIAL SHAFT VERSION



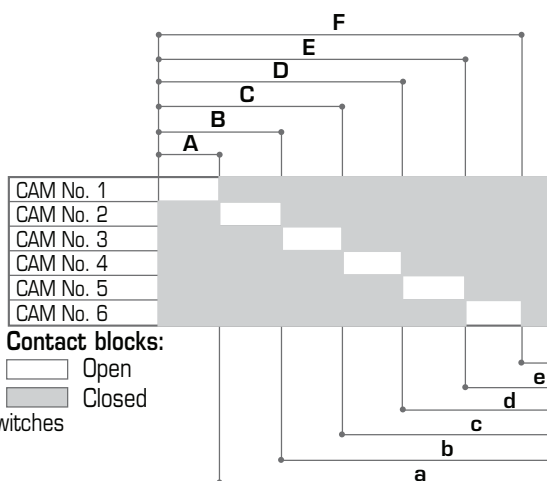
N° TOURS CAM/MOTORSHAFT REV RATIO	CODE		WEIGHT gr	MIN. PACK QTY.
	with 4 macro switches	with 6 macro switches		
1/12	FGR2006B	FGR2006B6	1.200	1
1/33	FGR2007B	FGR2007B6	1.200	1
1/50	FGR2008B	FGR2008B6	1.200	1
1/100	FGR2009B	FGR2009B6	1.200	1
1/200	FGR2010B	FGR2010B6	1.200	1

REVOLUTIONS REFERRED TO THE CAM'S ACTIVATION

MICRO SWITCH SCHEME



The trip refer to the action of the cam on contact 1-2 (NC)



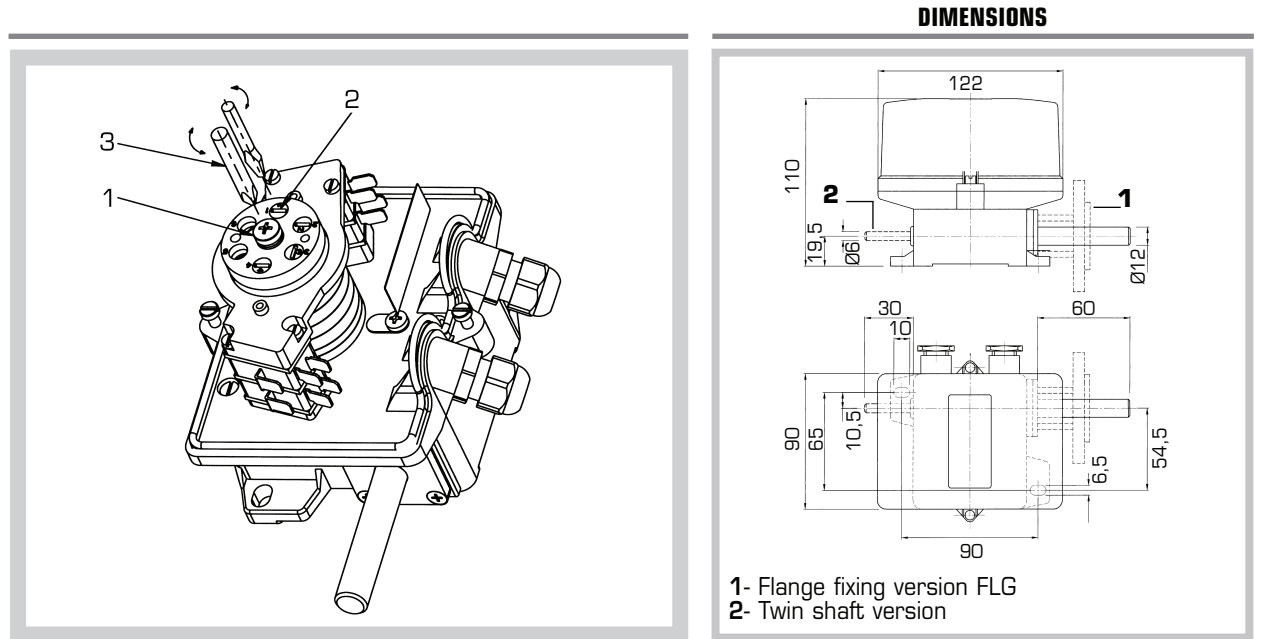
Note: All micro switches have changeover contacts.

No ROUND MINUTES	REVOLUTIONS REFERRED TO THE CAM'S ACTIVATION											
	A	a	B	b	C	c	D	d	E	e	F	f
12 rounds	1,25	10,75	2,5	9,5	3,75	8,25	5	7	6,25	5,75	7,5	4,5
33 rounds	3,5	29,5	7	26	10,5	22,5	14	19	17,5	15,5	21	13
50 rounds	5	45	10	40	15	35	20	30	25	25	30	20
100 rounds	10	90	20	80	30	70	40	60	50	50	60	40
200 rounds	20	180	40	160	60	140	80	120	100	100	120	80

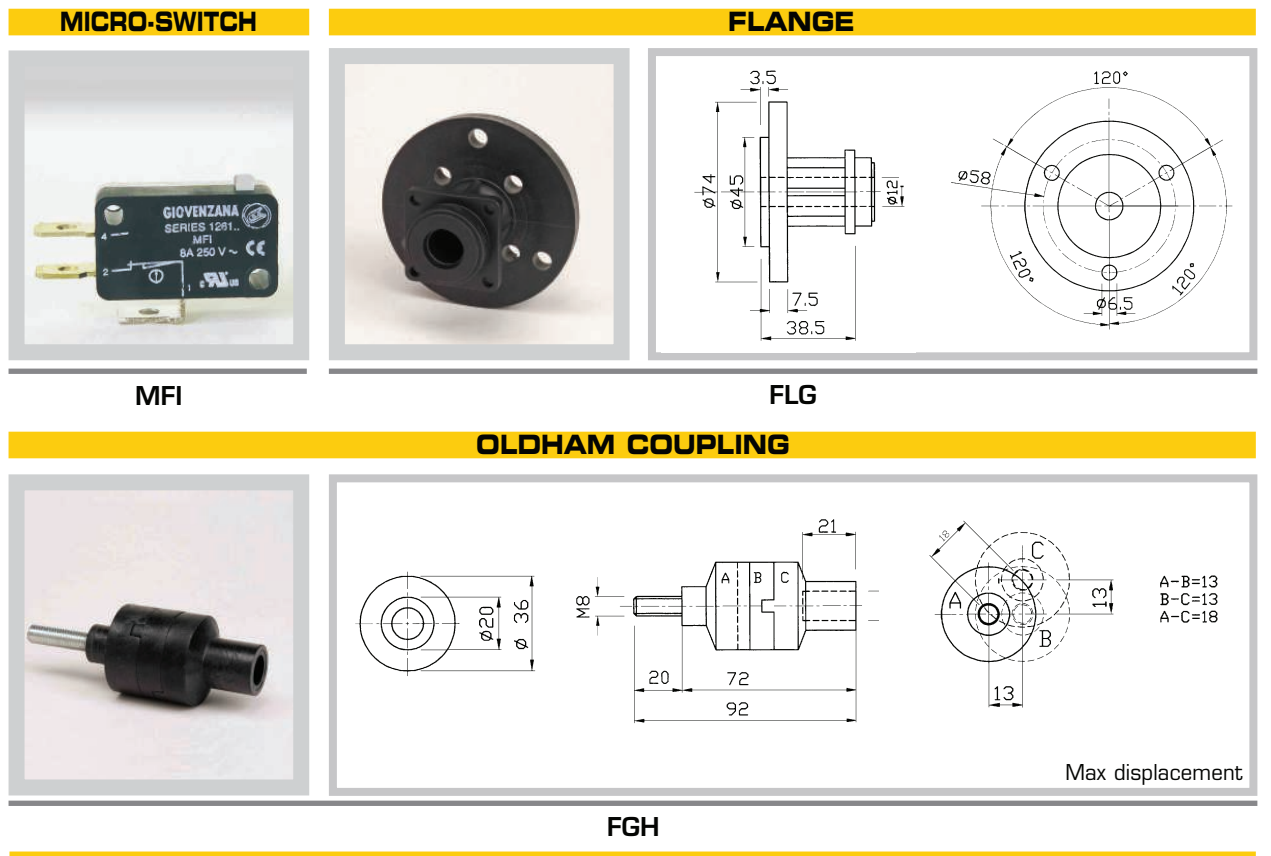
Rotary gear limit switches

FGR Series for control circuit

IP65



ACCESSORIES



Slip rings

Scudo - Prisma - Navale Series

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TECHNO-LIFTING EQUIPMENT



20 - 50A Slip rings from 3 up to 16 rings with open frame or protection rating up to IP65.

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■ Scudo - Prisma - Navale Series Versions	pag. 41	■ Warning horns AA Series	pag. 43

Slip rings

Scudo - Prisma - Navale Series

Characteristics

Slip rings are used to transfer electrical signal and power energy between stator and a rotor or viceversa. They are comprised of 3 or more in graphite or metal contacts, mounted on the steel shaft the brushes are all replace and are in graphite on Prisma and Navale Series in copper on Scudo Series

OPERATING TIME

The operating life of a slip ring is dependant upon the rotation speed and the dynamic stability.

CURRENT RATING

Capacity can be increasing by connecting in series or parallel two or more slip rings.

BRUSHES IN GRAPHITE

They are mainly used on low-medium speed applications. they are the most common in particular when more circuits are required as they ensure a very good connection they withstand low and high temperatures, aggressive environments with presence of chemicals and unidity.

SPEED OPERATION

Max rotation speed 20 turns 1'.

CHARACTERISTICS

SCUDO	PRISMA	NAVALE
<ul style="list-style-type: none"> Rated insulation voltage Ui 690V 	<ul style="list-style-type: none"> Rated insulation voltage Ui 690V 	<ul style="list-style-type: none"> Rated insulation voltage Ui 690V
<ul style="list-style-type: none"> Rated operating voltage Ue 500Vac 	<ul style="list-style-type: none"> Rated operating voltage Ue 500Vac 	<ul style="list-style-type: none"> Rated operating voltage Ue 500Vac
<ul style="list-style-type: none"> Rated operating current 20A. Intermittent working 30A. 	<ul style="list-style-type: none"> Rated operating current 50A 	<ul style="list-style-type: none"> Rated operating current 50A
<ul style="list-style-type: none"> Close frame version with protection rated IEC/EN60529 IP51 	<ul style="list-style-type: none"> Open frame 	<ul style="list-style-type: none"> Close frame version with protection rated IEC/EN60529 IP65
<ul style="list-style-type: none"> Modularity: from 3 up to 15 80 mm Ø rings 	<ul style="list-style-type: none"> Modularity: from 3 up to 16 100 mm Ø rings 	<ul style="list-style-type: none"> Modularity: from 3 up to 16 100 mm Ø rings
<ul style="list-style-type: none"> Cu brushes 	<ul style="list-style-type: none"> Brushes in graphite 	<ul style="list-style-type: none"> Brushes in graphite
<ul style="list-style-type: none"> 42 mm Ø shaft 	<ul style="list-style-type: none"> 51 mm Ø shaft 	<ul style="list-style-type: none"> 51 mm Ø shaft with roller bearings and O-ring
<ul style="list-style-type: none"> Pvc 147 mm Ø housing and terminals cover 		<ul style="list-style-type: none"> 280 mm Ø power coated alluminium housing with protection against aggressive environments
<ul style="list-style-type: none"> Ambient temperature: + 60° C - 30° C. 		

Slip rings

Scudo - Prisma - Navale Series

Versions

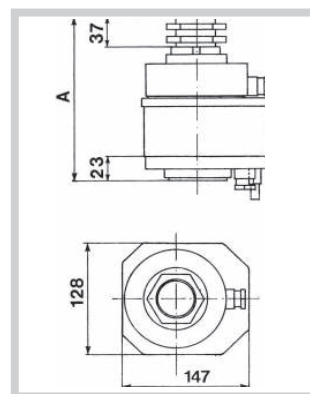


TECHNO-LIFTING EQUIPMENT

SCUDO 20A IP51 SERIE



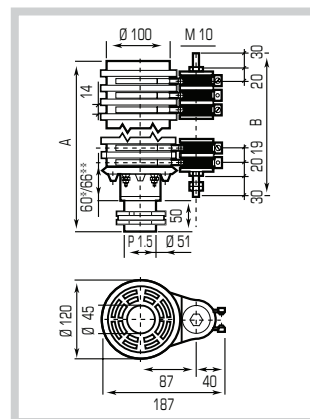
N° RINGS	CODE	DIMENSIONS A
3	30402091	180
4	30402092	195
5	30402093	210
6	30402094	225
7	30402095	240
8	30402096	255
9	30402097	270
10	30402098	285
11	30402099	300
12	30402100	315
13	30402101	330
14	30402102	345
15	30402103	360



PRISMA 50A IPOO SERIE



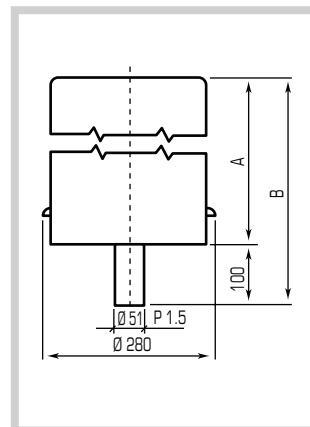
N° RINGS	CODE	DIM. A	DIM. B
3	30402037	170	143
4	30402038	190	162
5	30402039	210	181
6	30402040	230	200
7	30402041	250	219
8	30402042	270	238
9	30402043	290	257
10	30402044	310	276
11	30402045	330	295
12	30402046	350	314
13	30402047	370	333
14	30402048	390	352
15	30402049	410	371
16	30402050	430	390



NAVALE 50A IP65 SERIE



N° RINGS	CODE	DIM. A	DIM. B
3	30403001	265	375
4	30403002		
5	30403003		
6	30403004		
7	30403005		
8	30403006		
9	30403007		
10	30403008	470	570
11	30403009		
12	30403010		
13	30403011		
14	30403012		
15	30403013		
16	30403014		

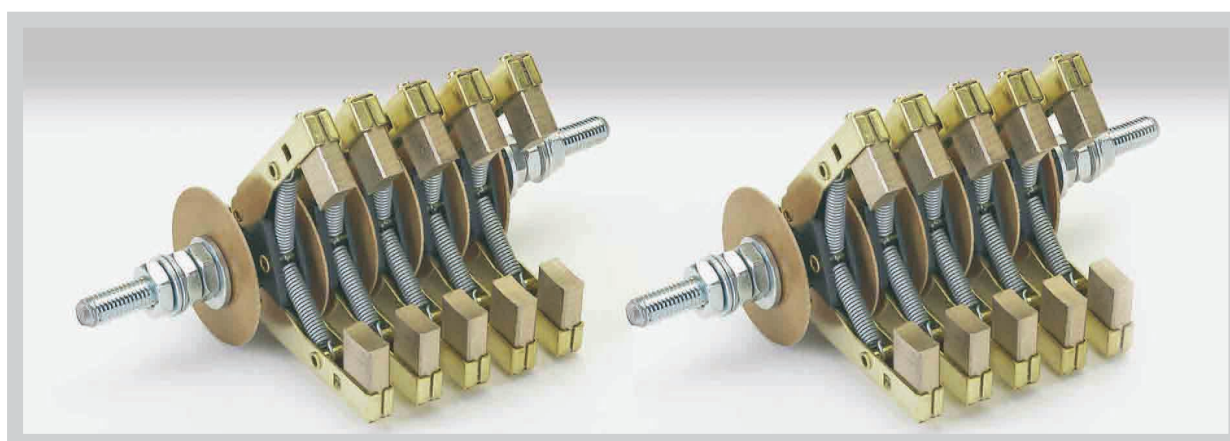


Slip rings

Scudo - Prisma - Navale Series

Accessories and spare parts

SPARE SPARTS PRISMA - NAVAL SERIES



BRUSHES GROUP IN GRAPHITE

■ Ø 100 Yellow isolator	11702001	■ 6 - Rings collectors	12202017
■ Brush isolator	11702004	■ 7 - Rings collectors	12202018
■ Collectors terminal	11702005	■ 8 - Rings collectors	12202019
■ 16 - Holes cable entry head	11708056	■ 9 - Rings collectors	12202020
■ Single brushes	12202033	■ 10 - Rings collectors	12202021
■ Charcoal-crayon for brushes	12202034	■ 11 - Rings collectors	12202022
■ Aluminium hexagon	21005005	■ 12 - Rings collectors	12202023
■ Aluminium fixing flange	21005007	■ 13 - Rings collectors	12202024
■ Ø 100 brass ring	21005010	■ 14 - Rings collectors	12202025
■ 3 - Rings collectors	12202015	■ 15 - Rings collectors	12202027
■ 4 - Rings collectors	12202016	■ 16 - Rings collectors	12202028
■ 5 - Rings collectors	12202026		

Warning horns

AA Series

G100 IP65 - G75 IP30



TECHNO-LIFTING EQUIPMENT

SINGLE TONE WARNING HORNS

Generally used in the industrial

Characteristics:

- Operation: continuous
- Frequency: 300÷350 Hz G100 Series, 50 Hz G75 Series
- Pressure (at 1 meter): 93,5 dB (A), G100 Series, 88 dB (A), G75 Series
- Wall mounted
- IEC/EN60529 protection rating: IP65 G100 Series, IP30 G75 Series
- Terminal type: 2 way terminal bar G100 Series, 3 way terminal (2+T) G75 Series
- G100 Series double insulated

G75 Ø 75



POWER SUPPLY Volt	CONSUMPTION mA	CODE	WEIGHT gr	MIN. PACK QTY.
24 AC	190	G75.24	120	2/12
48 AC	80	G75.48		
110 AC	28	G75.110		
230 AC	20	G75.230		
24 DC	40	G75.24DC		
48 DC	-	G75.48DC		

G100 Ø 100



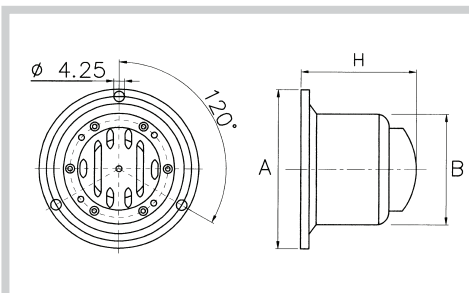
24 AC	415	G100.24	305	2/12
48 AC	210	G100.48		
110 AC	90	G100.110		
230 AC	42	G100.230		

BOX



For G75 **11710009**
For G100 **11710010**

DIMENSIONS



	G75	G100
A	Ø 95.5	Ø 120
B	Ø 76.5	Ø 95.5
H	56	58

Overall dimensions include the back box

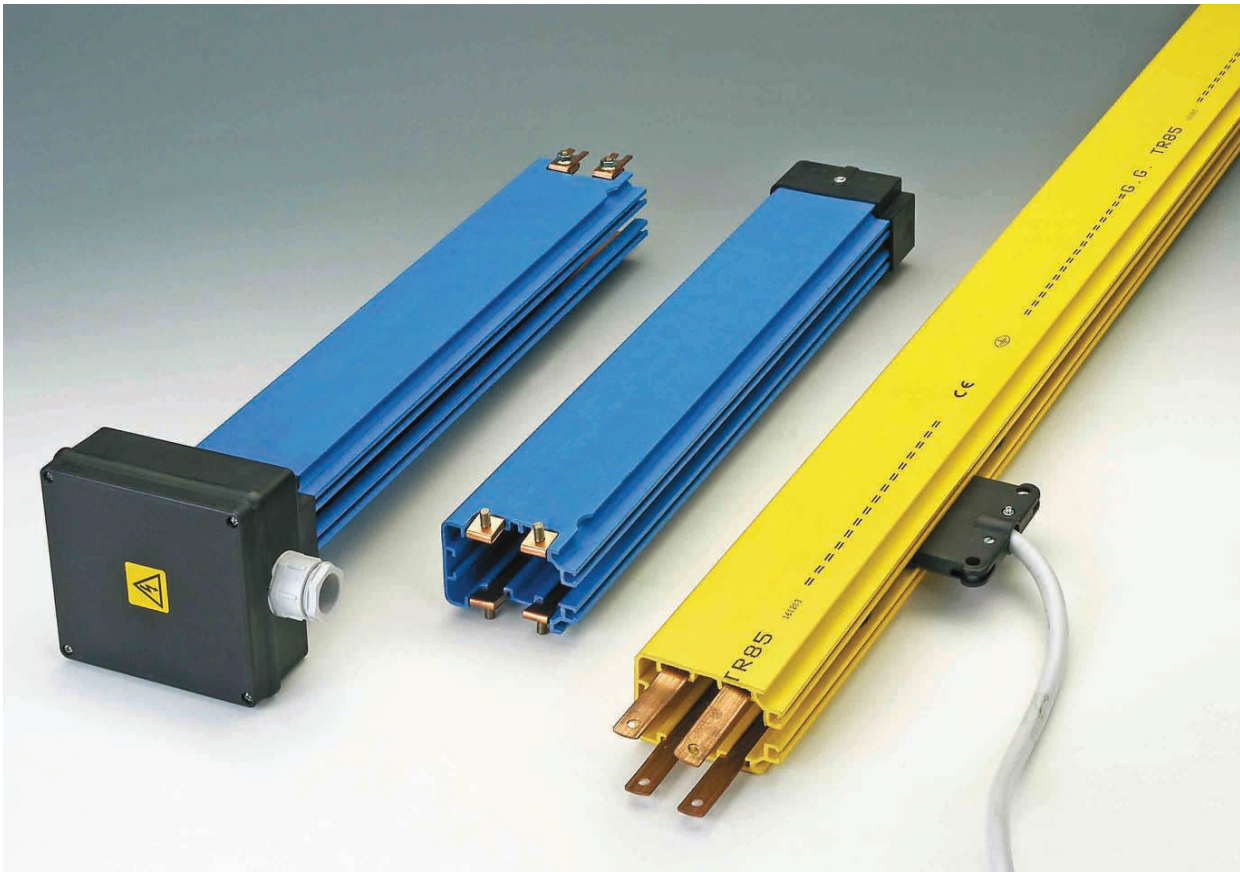
Energy and data transmission

28 - 30 - 41- wire rope-i beam - TR 85 Series

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TECHNO-LIFTING EQUIPMENT



The fastoon system includes 28,30,41; Series c-rail cable trolley wire rope cable Trolleys, i-beam cable Trolley. The TR85 series conductor rail range offers both plug-in (line **A**) or continuous strip (line **B**) type system.

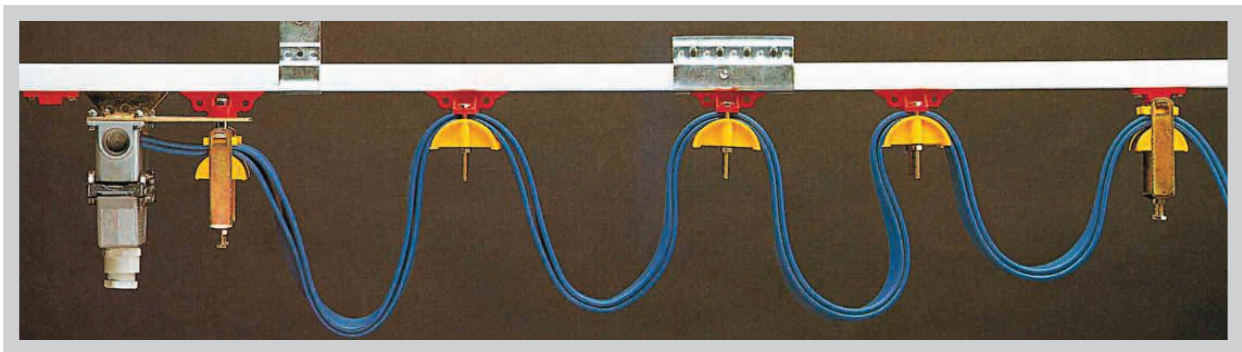
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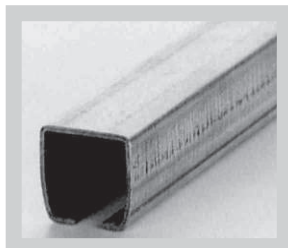
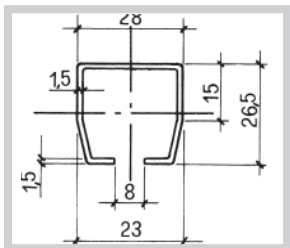
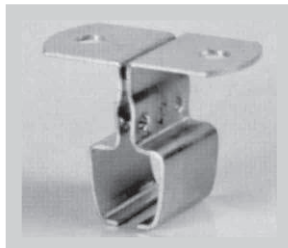
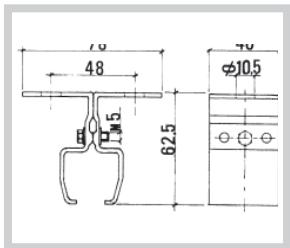

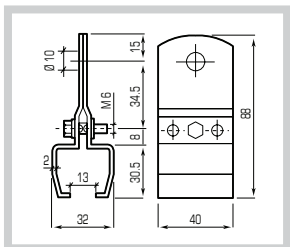
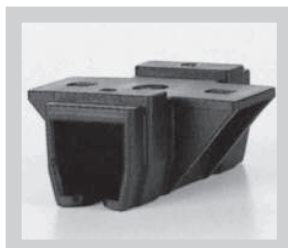
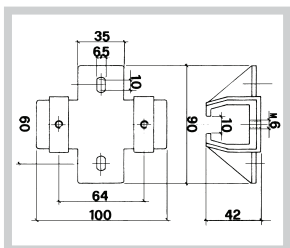
■ 28 Series fastoon system	pag. 46	■ TR85 Series Trolley system Calculation line	pag. 63
■ 30 Series fastoon system	pag. 49	■ TR85 Series Trolley system Examples of orders	pag. 65
■ 41 Series fastoon system	pag. 52	■ TR85 Series Trolley system TR85 Series conductor rails line A plug-in type	pag. 66
■ Wire rope Series $\varnothing 8$	pag. 57	■ TR85 Series Trolley system TR85 Series conductor rails line B continuous strip type	pag. 69
■ Light i-beam Series	pag. 58	■ Conductors CP and CT Series	pag. 74
■ Heavy i-beam Series	pag. 59	■ Spare parts Disconnectors	pag. 76
■ 28 - 30 - 41 Series conduct rails Example of installation	pag. 60		
■ TR85 Series Trolley system - Characteristic	pag. 61		
■ TR85 Series Trolley system Characteristics - Calculation for down-current	pag. 62		

Energy and data transmission

28 Series

Festoon system




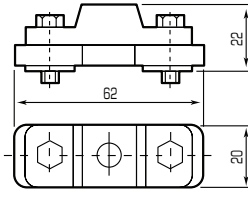

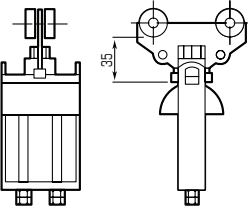

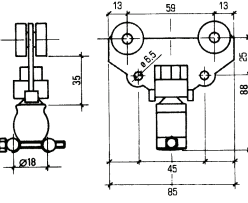

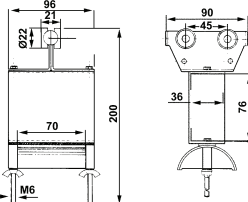

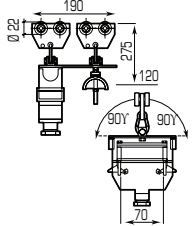
	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>C-Rail bar</p> <ul style="list-style-type: none"> Material: galvanized steel Length: 4 mt Weight: 3,92 kg Load capacity: 100 kg/mt 	30603001/4	1	
	<p>Track support bracket 2 Pieces Bolts is excluded</p> <ul style="list-style-type: none"> Material: galvanized steel Step for recommended mounting near between two bracket: 1 mt 	30603002	1	
	<p>Track support bracket 2 Pieces Bolts is excluded</p> <ul style="list-style-type: none"> Material: galvanized steel Step for recommended mounting near between two bracket: 1 mt 	30603003	1	
	<p>Bracket connectors To join c-rails and suitable for supporting the track</p> <ul style="list-style-type: none"> Material: PA 6 	30603004	1	

Energy and data transmission

28 Series Festoon system




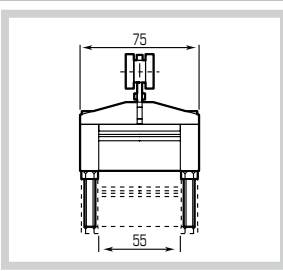

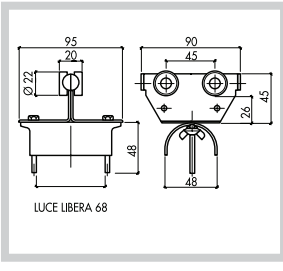

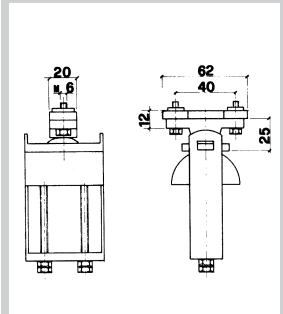

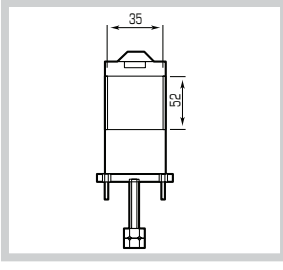

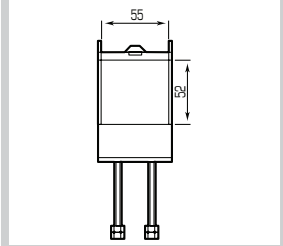
TECHNO-LIFTING EQUIPMENT

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>End stop</p> <ul style="list-style-type: none"> Material: PA 6 	30603005	1	
	<p>Flat cable trolley</p> <p>Round cable trolley with rotating saddle</p> <ul style="list-style-type: none"> Material: PA 6 Type of roller: steel roller with ball. Travel speed 80mt/min Load capacity: 15kg 55 mm Plastic saddle (excursion 50 mm) 	30603008	10	
	<p>Round cable trolley With metal cable clip</p> <ul style="list-style-type: none"> Max cable diameter: 18 mm Material: PA 6 Type of roller: steel roller with ball. travel speed 80 mt/min. Load capacity: 15kg 	30603024	10	
	<p>Towing trolley</p> <ul style="list-style-type: none"> Material: galvanized steel Type of roller: steel roller with ball. travel speed 80 mt/min. 68 mm: Plastic saddle 	30603064	1	
	<p>Trolley with plug and safety socket connection To connect the festoon system to the pendant station</p> <ul style="list-style-type: none"> 68 mm: Plastic saddle 16 Poles 24 Poles 	30603066	1	
		30603067	1	

Energy and data transmission

28 Series

Festoon system

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Light Series Trolley Main body, saddle and wheels in PA for a considerable noise reduction</p> <ul style="list-style-type: none"> ■ Type of roller: PA roller Travel speed 40 mt/min. ■ Load capacity: 10 kg ■ 55 mm: Plastic saddle 	<p>30603035</p>	<p>10</p>	
	<p>Steel trolley</p> <ul style="list-style-type: none"> ■ Material: galvanized steel ■ Type of roller: steel rollers with ball bearings: travel speed 80 m/min. ■ Load capacity: 15 kg ■ 68 mm: Plastic saddle 	<p>30603061</p>	<p>10</p>	
	<p>End clamp</p> <ul style="list-style-type: none"> ■ Material: PA 6 ■ Load capacity: 15 kg 	<p>30603016</p> <p>30603065</p> <p>30603018</p>	<p>1</p> <p>1</p> <p>1</p>	
	<p>■ 55 mm Plastic saddle Range 50 mm</p>			
	<p>■ 68 mm Plastic saddle Range 50 mm</p>			
	<p>40 mm Plastic saddle</p> <ul style="list-style-type: none"> ■ Material: PA 6 and galvanized steel ■ Range 50 mm 	<p>30603030</p>	<p>10</p>	
	<p>55 mm Plastic saddle</p> <ul style="list-style-type: none"> ■ Material: PA 6 and galvanized steel ■ Range 50 mm 	<p>30603031</p>	<p>10</p>	

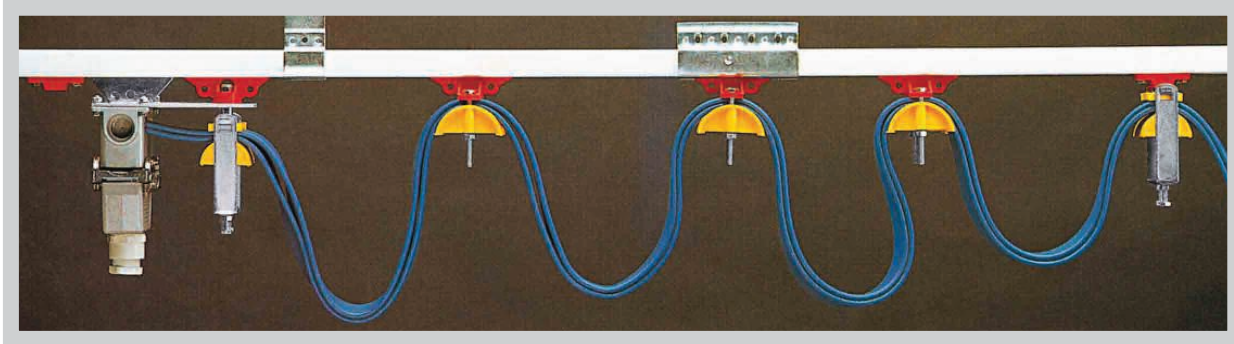
Energy and data transmission


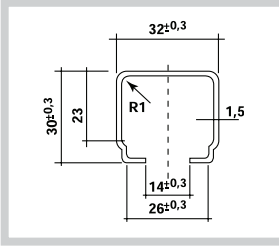

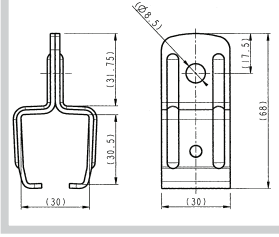

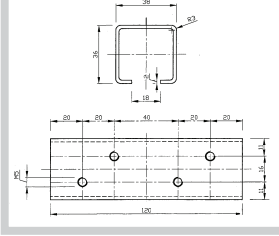
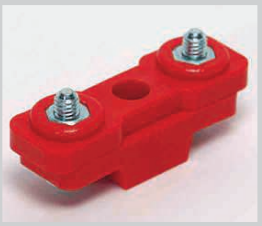
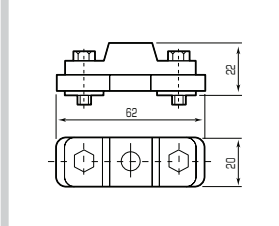
30 Series

Festoon system



TECHNO-LIFTING EQUIPMENT


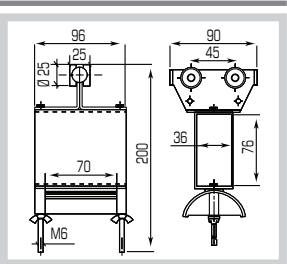

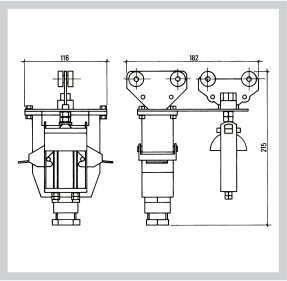

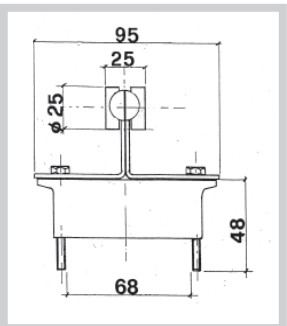
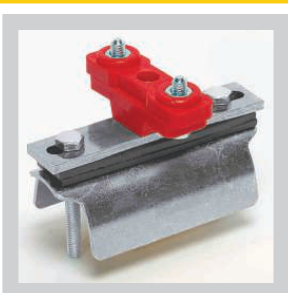
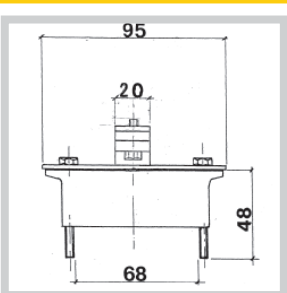

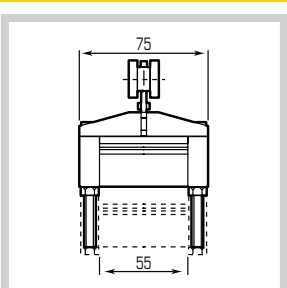


	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	C-Rail bars <ul style="list-style-type: none"> Material: galvanized steel Length: 4 mt Weight: 5 kg Load capacity: 100 kg/mt 	30607001	1	
	Truck support bracket 2 Pieces <ul style="list-style-type: none"> Material: galvanized steel Max support spacing: 1mt 	30607003	1	
	Truck support bracket To connect a C-Rails and suitable for supporting the track ceiling fixing <ul style="list-style-type: none"> Material: galvanized steel 	30607002	1	
	End stop <ul style="list-style-type: none"> Material: PA 6 	30607005	1	

Energy and data transmission

30 Series

Festoon system

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Towing trolley</p> <ul style="list-style-type: none"> Material: galvanized steel Type of roller: steel rollers with ball 68 mm Plastic saddle 	<p>30607007</p>	<p>1</p>	
	<p>Trolley with safety plug and socket connection</p> <ul style="list-style-type: none"> To connect the festoon system to the pendant station 68 mm Plastic saddle 16 Poles 24 Poles 	<p>30607008 30607019</p>	<p>1 1</p>	
	<p>Towing trolley</p> <ul style="list-style-type: none"> Material: galvanized steel Type of roller: steel rollers with ball 68 mm Plastic saddle Material: galvanized steel Type of roller: steel rollers with wheels 68 mm Plastic saddle 	<p>30607010 30607009</p>	<p>10 10</p>	
	<p>End clamp</p> <ul style="list-style-type: none"> Material: PA 6 and galvanized steel 68 mm Plastic saddle 	<p>30607006</p>	<p>1</p>	
	<p>Trolley in PA</p> <ul style="list-style-type: none"> Material: PA Type of roller: PA steel rollers with ball bearings 55 mm Plastic saddle 	<p>30607011</p>	<p>10</p>	


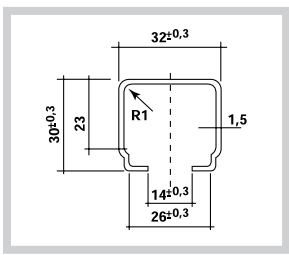

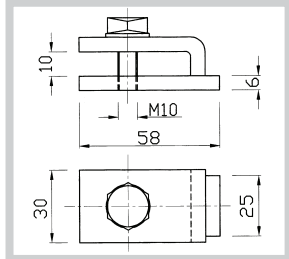
Energy and data transmission

30 Series

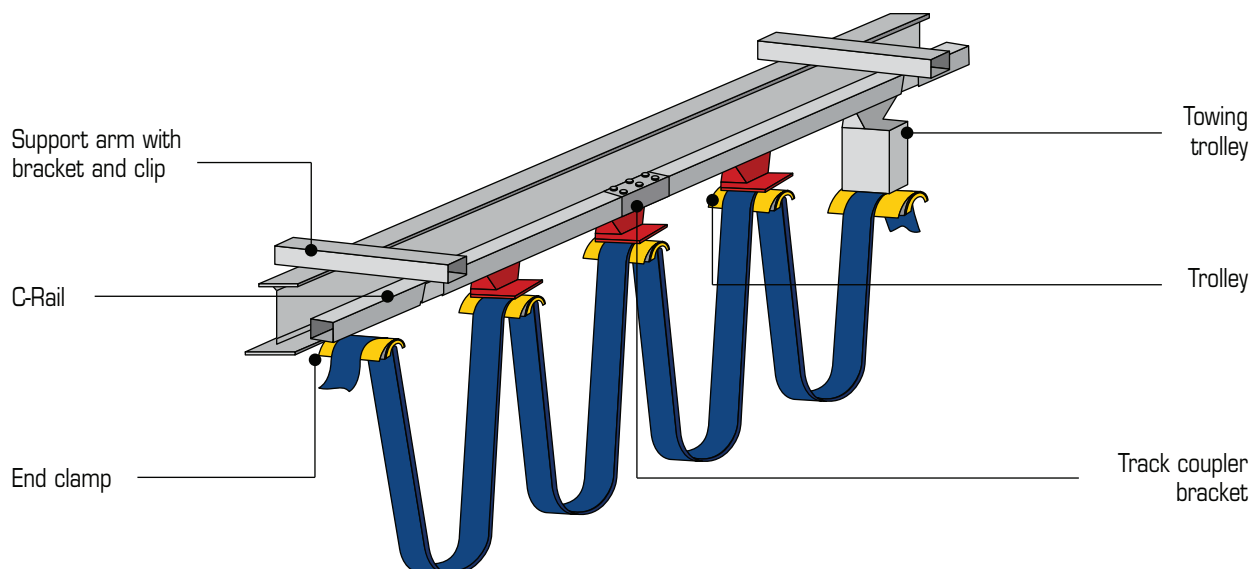
Festoon system



TECHNO-LIFTING EQUIPMENT

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	Bracket ■ Material: galvanized steel ■ Length: 50 mm ■ Length: 80 mm	30607001/05 30607001/08	1 1	
	Support arm bracket ■ Material: galvanized steel	30607004	1	
	Support arm clip ■ Material: galvanized steel n.2 Terminals for every bracket	30607012	1	

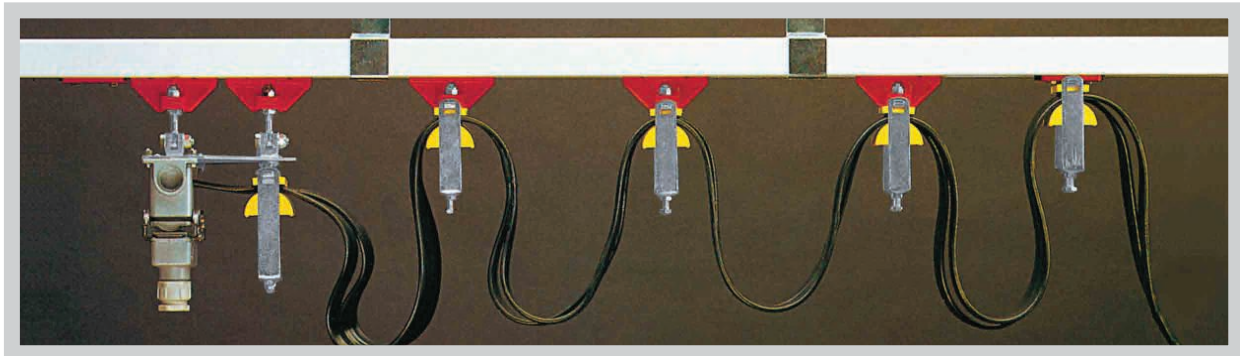
ASSEMBLY EXAMPLE

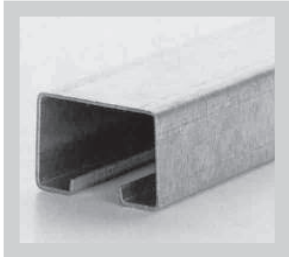
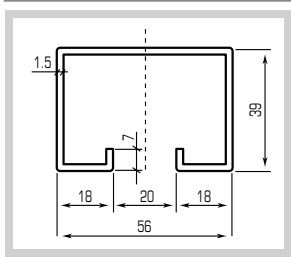

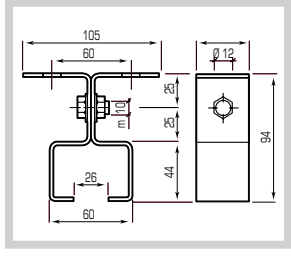

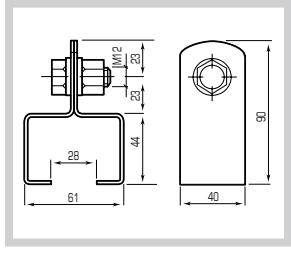
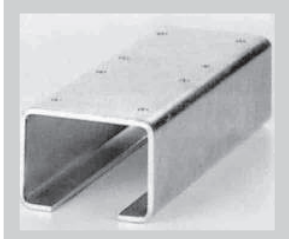
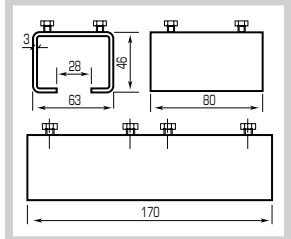


Energy and data transmission

41 Series

Festoon system



	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	C-Rail bars <ul style="list-style-type: none"> Material: galvanized steel Length: 4 mt Weight: 8 kg Load capacity: 140 kg/mt 90° Curve 1,5 mt radius* 	30602001/4	1	
			30602054	
	Track support bracket Ceiling fixing 2 pieces Bolts not included <ul style="list-style-type: none"> Material: galvanized steel Max support spacing: (1 mt recommended) 	30602004	1	
	Track support bracket Wall fixing Bolts not included <ul style="list-style-type: none"> Material: galvanized steel Max support spacing: (1 mt recommended) 	30602003	1	
	Track coupler bracket To join c-rail and suitable for supporting the track <ul style="list-style-type: none"> Material: galvanized steel 	30602002	1	
	Double track coupler bracket Recommended for track over 50 mt <ul style="list-style-type: none"> Material: galvanized steel 	30602034	1	

*The use of the curve requires a mechanical adjustment during assembly line.


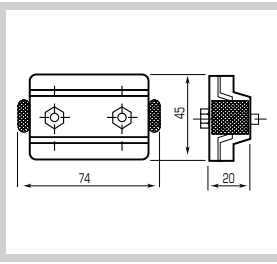

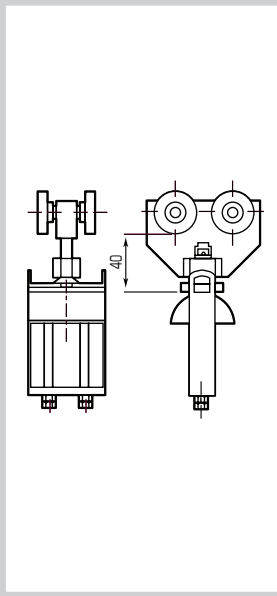

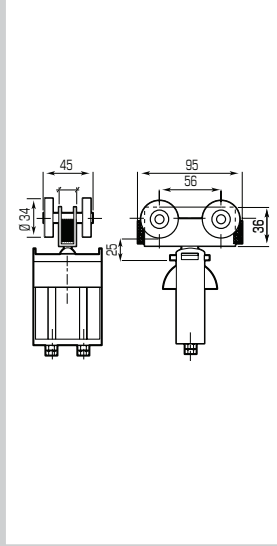
Energy and data transmission

41 Series

Festoon system




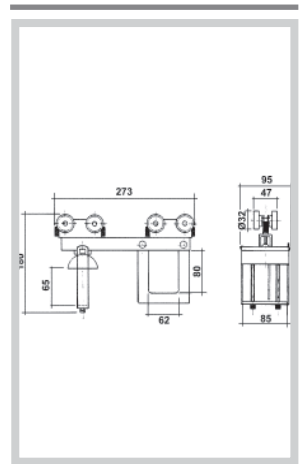

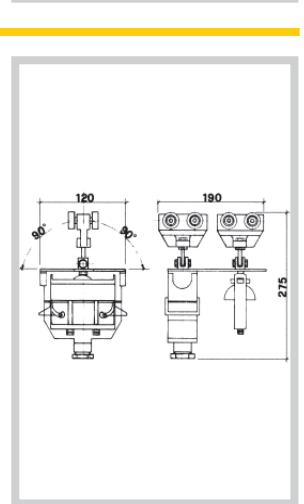

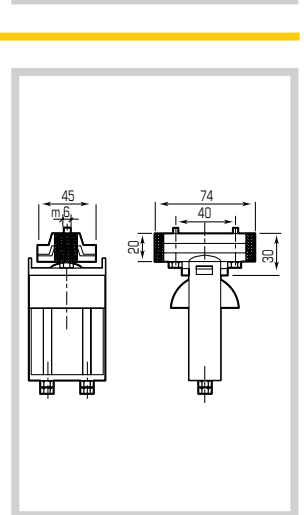
TECHNO-LIFTING EQUIPMENT

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>End stop</p> <ul style="list-style-type: none"> Material: Support PVC buffer 	30602038	1	
	<p>Flat cable trolley</p> <ul style="list-style-type: none"> Material: PA 6 Type of trolley: PA roller. Travel speed 60m/min. Load capacity: 15 kg 40 mm: Plastic saddle 55 mm: Plastic saddle Range 50 mm 	30602012	10	
	<p>Round cable trolley</p> <ul style="list-style-type: none"> Material: PA 6 Type of trolley: PA roller. Travel speed 60m/min. Load capacity: 15 kg 40 mm: Plastic saddle 55 mm: Plastic saddle Range 50 mm 	30602013	10	
		30602014	10	
		30602015	10	
	<p>Flat cable trolley</p> <ul style="list-style-type: none"> Material: galvanized steel Sliding: ball bearings travel speed 120m/min. Load capacity: 25 kg 40 mm: Plastic saddle 55 mm: Plastic saddle 68 mm: Plastic saddle 	30602076	10	
	<p>Round cable trolley</p> <ul style="list-style-type: none"> Material: galvanized steel Sliding: ball bearings travel speed 120m/min. Load capacity: 25 kg 40 mm: Plastic saddle 55 mm: Plastic saddle 	30602082	10	
		30602077	10	
		30602086	10	
		30602083	10	
		30602083	10	

Energy and data transmission

41 Series

Festoon system

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Towing trolley</p> <ul style="list-style-type: none"> ■ Material: galvanized steel ■ Sliding: ball bearings ■ 68 mm Plastic saddle Range 50 mm ■ Twin execution ■ Single execution 	<p>30602020</p> <p>30602091</p>	<p>1</p> <p>1</p>	
	<p>Trolley with safety plug and socket</p> <p>To connect the festoon system to the pendant station</p> <ul style="list-style-type: none"> ■ 68 mm Plastic saddle ■ 16 Poles ■ 24 Poles 	<p>30602036</p> <p>30602040</p>	<p>1</p> <p>1</p>	
	<p>End clamp</p> <ul style="list-style-type: none"> ■ Material: PA 6 and galvanized steel ■ Load capacity: 15 kg ■ 40 mm Plastic saddle ■ 55 mm Plastic saddle ■ 68 mm Plastic saddle ■ Range 50 mm 	<p>30602006</p> <p>30602007</p> <p>30602092</p>	<p>1</p> <p>1</p> <p>1</p>	


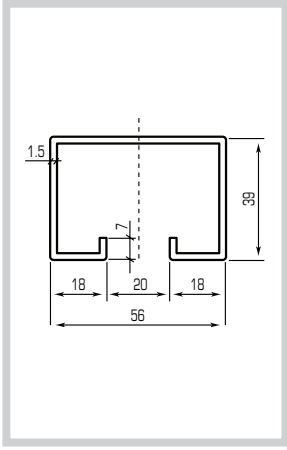

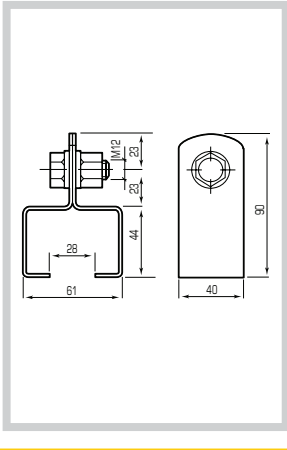
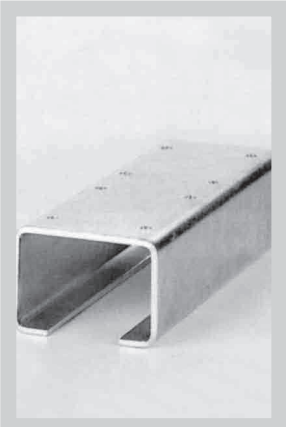
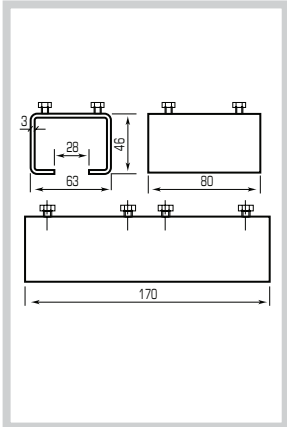
Energy and data transmission

41 Series Inox

Festoon system



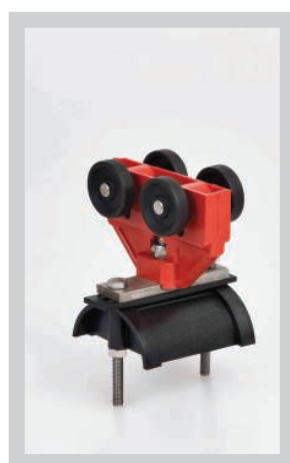
TECHNO-LIFTING EQUIPMENT

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>C-Rail bars</p> <ul style="list-style-type: none"> Material: stainless steel Length: 3 m Weight: 8 kg Load capacity: 140 kg/m 	30602061	1	
	<p>Inox track support bracket</p> <p>Ceiling fixing 2 pieces Bolts not included</p> <ul style="list-style-type: none"> Material: stainless steel Max support spacing: 1 mt recommended 	30602063	1	
	<p>Inox track support bracket</p> <p>To join c-rail</p> <ul style="list-style-type: none"> Material: stainless steel Single track coupler bracket Double track coupler bracket Recommended for track over 50 mt 	<p>30602065</p> <p>30602062</p>	<p>1</p> <p>1</p>	

Energy and data transmission

41 Series Inox

Festoon system



DESCRIPTION

Inox flat cable trolley

- Material: PA 6/inox steel
- Type of trolley: PA roller.
Travel speed 60m/min.
- Load capacity: 25 kg
- 55 mm Plastic saddle

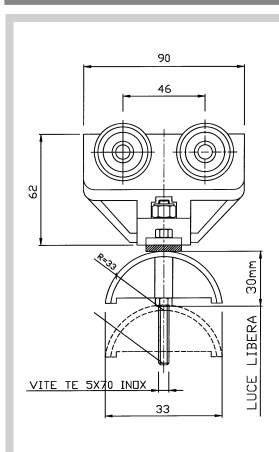
CODE

30602064

MIN. PACK QTY.

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DIMENSIONS

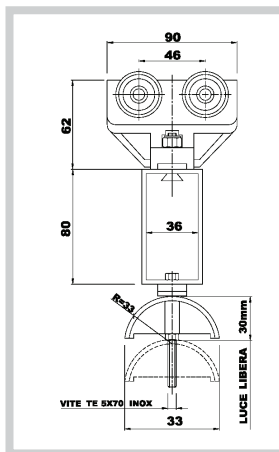


Towing trolley

- Material: PA 6/Inox steel
- Type of roller: steel rollers with ball
- 55 mm Plastic saddle

30602067

1

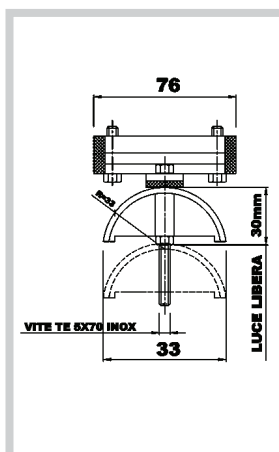


End clamp

- Material: PA 6/Inox steel
- Load capacity: 15 kg
- 55 mm Plastic saddle

30602066

1



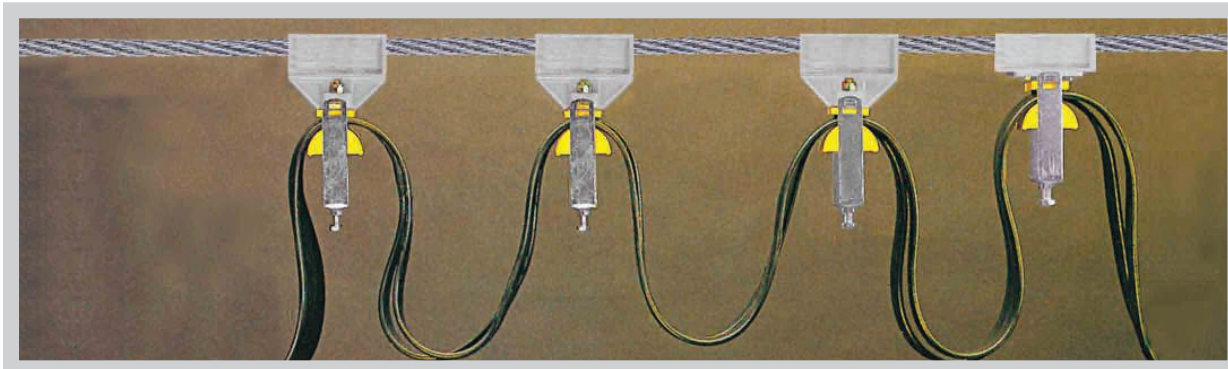
Energy and data transmission

Wire rope Series

Ø 8 Rope fastoon system



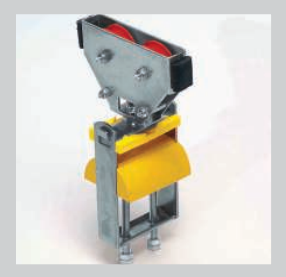
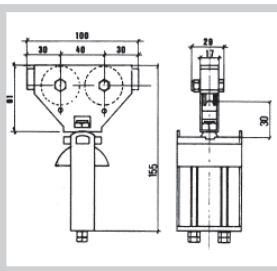

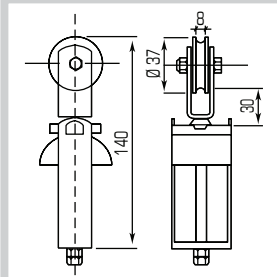

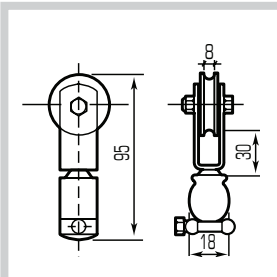
TECHNO-LIFTING EQUIPMENT



CHARACTERISTICS

Wire rope fastoon system are used in cases where c-rail and i-beam track power supplies are difficult to install.

- Rope diameter: Ø 8
- Trolley for flat or round cable
- Travel speed: 40 m/min.
- Load capacity: 8 kg

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Two rollers trolley</p> <ul style="list-style-type: none"> ■ Material: PA6 and galvanized steel ■ Type of roller: PA roller ■ Rotating 55 mm plastic saddle ■ Range 50 mm 	30604003	10	
	<p>One roller trolley</p> <ul style="list-style-type: none"> ■ Material: PA6 and galvanized steel ■ Type of roller: PA roller ■ Rotating 40 mm plastic saddle ■ Range 50 mm 	30604005	10	
	<p>Single roller trolley with metal cable clip</p> <ul style="list-style-type: none"> ■ Material: PA6 and galvanized steel ■ Type of roller: PA roller ■ Rope max: 18mm 	30604007	10	

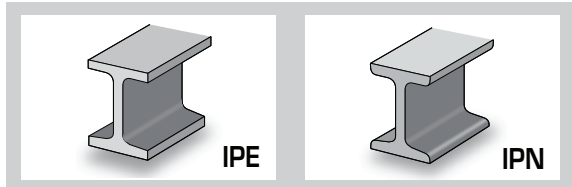
Energy and data transmission

Light Series

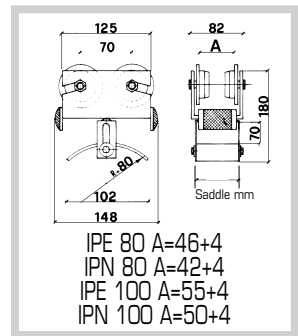
I-Beam

CHARACTERISTICS

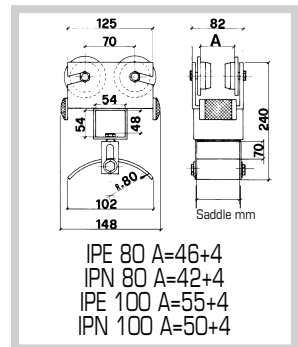
- The FASTOON SYSTEM with steel sliding IPE-IPN are suitable for installation in industries where heavy duty is required (power of mobile equipment in steel mills, cranes, rolling mills, foundries, storage containers, etc.)
- IPE-IPN 80÷120 beam
- Travel speed: 120 m/min.
- Max trolley load capacity: 200 kg
- Max cable package window opening height of 70 mm for both flat and round cable



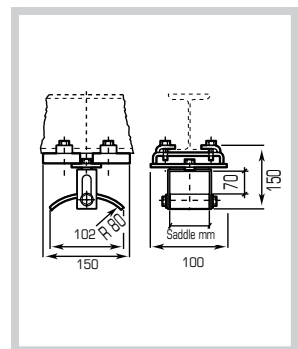
TROLLEY				
BEAM	IPE 80		IPN 80	
Saddle mm	55	85	55	85
PA Rollers	30606003	30606005	30606004	30606006
Steel rollers	30606103	30606105	30606104	30606106
BEAM	IPE 100		IPN 100	
Saddle mm	55	85	55	85
PA Rollers	30606011	30606013	30606012	30606014
Steel rollers	30606111	30606113	30606112	30606114



TOWING TROLLEY				
BEAM	IPE 80		IPN 80	
Saddle mm	55	85	55	85
PA Rollers	30606033	30606035	30606034	30606036
Steel rollers	30606133	30606135	30606134	30606136
BEAM	IPE 100		IPN 100	
Saddle mm	55	85	55	85
PA Rollers	30606041	30606043	30606042	30606044
Steel rollers	30606141	30606143	30606142	30606144



END CLAMP				
BEAM	IPE 80 - IPN80		IPE 100 - IPN 100	
Saddle mm	55	85	55	85
Code	30606062	30606063	30606066	30606067



Energy and data transmission

Heavy Series

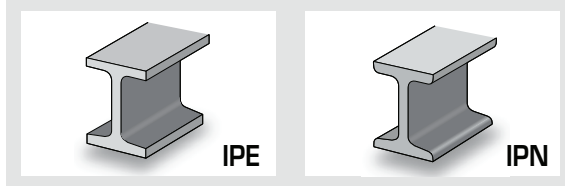
I-Beam



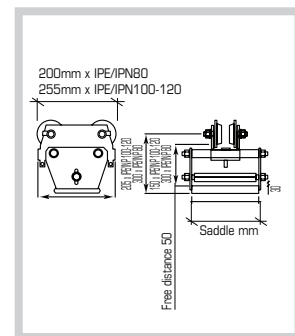
TECHNO-LIFTING EQUIPMENT

CHARACTERISTICS

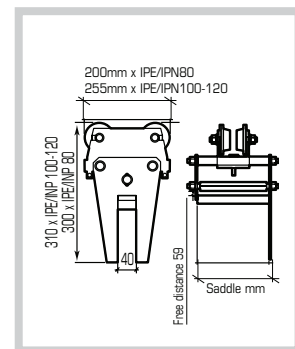
- The FASTOON SYSTEM with steel sliding IPE-IPN are suitable for installation in industries where heavy duty is required (power of mobile equipment in steel mills, cranes, rolling mills, foundries, storage containers, etc.)
- IPE-IPN 80-120 beam
- Travel speed: 120 m/min.
- Max trolley load capacity: 200 kg
- Max cable package window opening height of 50 mm for both flat and round cable



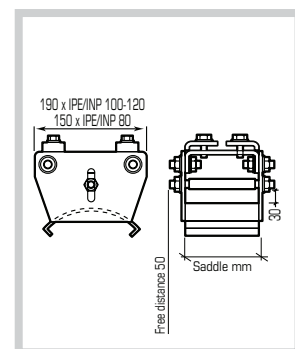
TROLLEY				
BEAM	IPE 80		IPN 80	
Saddle mm	100	160	100	160
Steel rollers	30605001	30605002	30605003	30605004
BEAM	IPE 100		IPN 100	
Saddle mm	160	180	160	180
Steel rollers	30605005	30605006	30605007	30605008
BEAM	IPE 120		IPN 120	
Saddle mm	160	180	160	180
Steel rollers	30605009	30605010	30605011	30605012



TRAINO				
BEAM	IPE 80		IPN 80	
Saddle mm	100	160	100	160
Steel rollers	30605013	30605014	30605015	30605016
BEAM	IPE 100		IPN 100	
Saddle mm	160	180	160	180
Steel rollers	30605017	30605018	30605019	30605020
BEAM	IPE 120		IPN 120	
Saddle mm	160	180	160	180
Steel rollers	30605021	30605022	30605023	30605024



END CLAMP		
BEAM	IPE 80 - IPN 80	
Saddle mm	100	160
Steel rollers	30605025	30605026
BEAM	IPE 100 - IPN 100	
Saddle mm	160	180
Steel rollers	30605027	30605028
BEAM	IPE 120 - IPN 120	
Saddle mm	160	180
Steel rollers	30605029	30605030

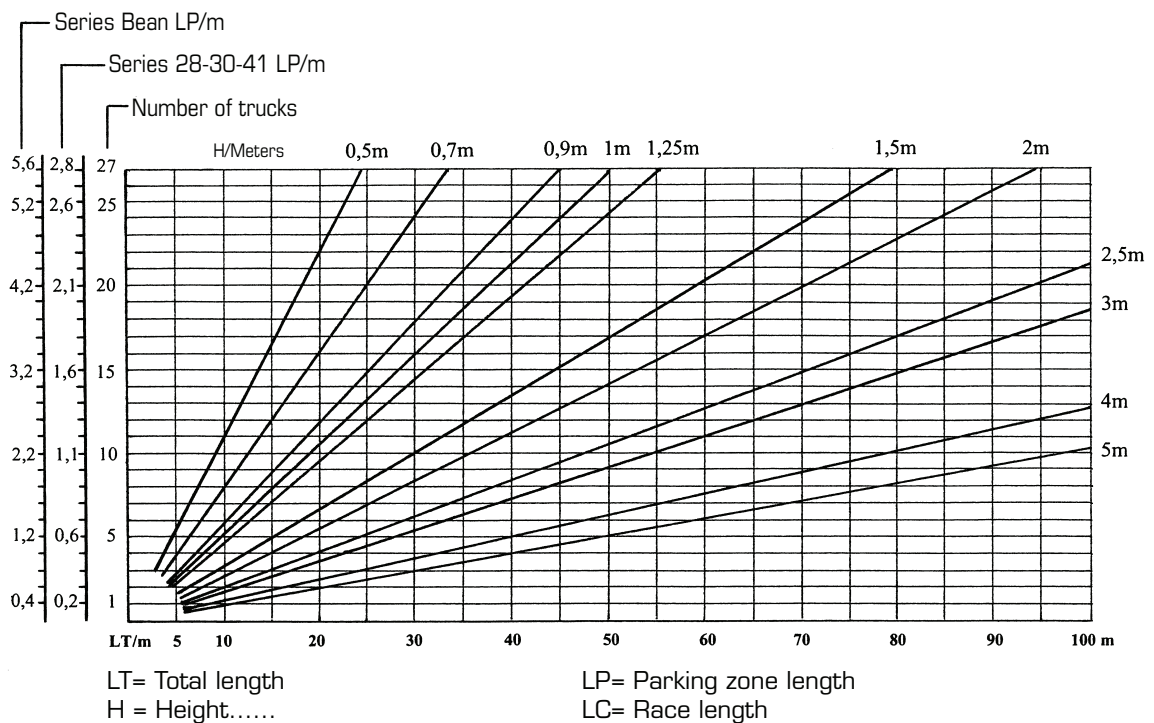
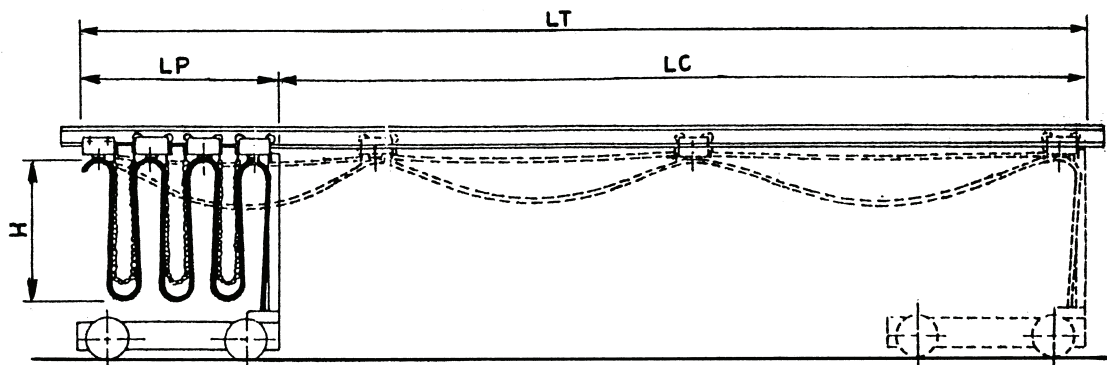


Energy and data transmission

Series festoon 28 - 30 - 41 and on i-beam

Assembly example

LINES DIAGRAMS



The diagram is used to determine the number of trucks necessary for the formation of the line, depending on its length. The height of the loop determines how many trucks are needed and thus their parking area. Where the parking area is too long at the expense of running real user, it must increase the height of the loops, thus decreasing the number of trucks required and therefore the parking area. To determine the cable length of a garland to increase by 10% the total length of the line and add enough to connect the two ends of the fixed and mobile users.

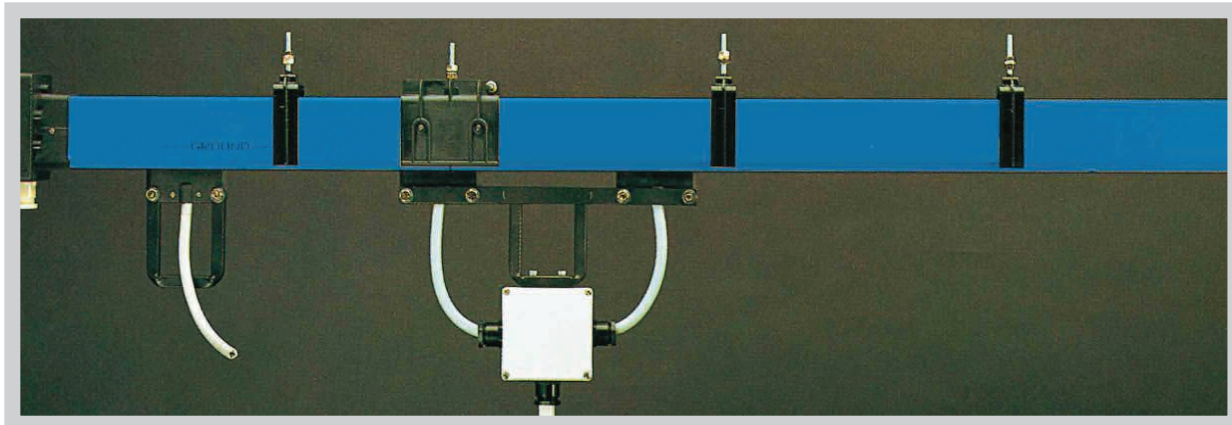
Energy and data transmission

TR85 Trolley Series

From 40A to 200A



TECHNO-LIFTING EQUIPMENT



GENERAL CHARACTERISTICS

The TR85 Series conductors rails are modern and safe system for energy and data transmission for various types of equipment such as: cranes - bridge cranes - conveyour belts - chain conveyors - etc... The TR85 range comply with the relevant international standards ensuring operator safety, easy of installation and reliability. the system is available in the following versions:

- **Line A blue colour** - with conductors preinserted inside the plastic casing. copper strips are connected by means of dedicated terminals.
- **Line B yellow colour** - with conductors strip to be pulled from a coil continuously into the pre-assembled plastic casings with the aid of a towing trolley in case of long systems.

GENERAL CHARACTERISTICS

		40	70	100	140	200
■ Operating current 23°C	A	40	70	100	140	200
■ Comply with rules		CEI EN 60439-1 e 2, CEI EN 60695-2-1., CEI EN 60570				
■ Rated operating voltage Ue	V	600V ac				
■ Frequency	Hz	50 Hz				
■ Conditional rated short circuit withstand current	kA	10	10	10	10	10
■ Fuse rating gG	A	40	70	100	160	200
■ Rated short-time current Icw	A	600	900	1400	1800	2500
■ Protection class CEI EN 60529:						
■ Standard execution		IP13				
■ Execution with rubber		IP23				
■ Flammability resistance	UL 94	V0				
	CEI EN 60695-2-1. °C	960				
■ Ambient temperature: operating	°C	- 30 + 55				
	storage	- 30 + 70				
■ Admissible current collector trolley speed	m/min. ¹	200				
■ Conductor Cu	mm ²	9,3	15,5	21,7	31	46,5
■ Resistance	Ω/m . 10 ⁻⁴	18,27	10,96	7,83	5,48	3,65
■ Impedance	Ω/m . 10 ⁻⁴	18,36	11,01	7,87	5,55	3,67

Energy and data transmission

TR85 Trolley Series

From 40A to 200A

PVC RAIL TRACK CHARACTERISTICS

Material	Rigid PVC	
Self-extinguishing	UL 94 DIN 4102 D.M.6/7/83	VO B2 Cl
Ultimate tensile strenght	ISO R527 23°C	430 kg/cm ³
Yield point	ISO R527 23°C	460 kg/cm ²
Modulus of elasticity	ISO R178 23°C	30000 kg/cm ²
Impact resistance	DIN 53453	Unbroken
Dielectric strenght	ASTM 149	25 kV/mm
Softening temeprature - Vicat	ISO R306 49N	82°C

CONDUCTORS BARS WEIGHT TABLE

N° CONDUCTORS	WEIGHT PER LINEAR METER/RANGE				
	40A	70A	100A	140A	200A
4	1,680 kg/m	1,902 kg/m	2,122 kg/m	2,454 kg/m	3,010 kg/m
5	1,764 kg/m	2,050 kg/m	2,305 kg/m	2,730 kg/m	3,423 kg/m

CALCULATION OF THE VOLTAGE DROP

Voltage drop should not exceed 5% of rated voltage under normal operating.

3 Phase AC

$$\Delta u = \sqrt{3} \times I \times L_t \times Z$$

$$\Delta u \% = \frac{\Delta u \times 100}{U}$$

WHERE

Δu	= Voltage drop	(V)
$\Delta u \%$	= Voltage drop	(%)
I	= Intensity	(A)
L_t	= Length of section (m)	(m)
Z	= Impedance	(Ω /m)
U	= Voltage	(U)

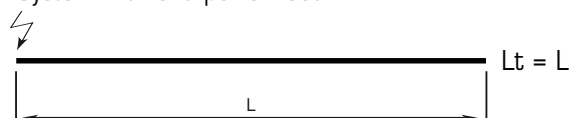
RAIL TRACK LINES POWER

A proper disposal of power feed points allow voltage drop reduction.

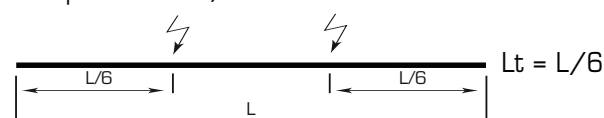
If L is the length of the line, L_t is the track maximum length to consider the voltage drop.

$L_t = L$	With end power feed
$L_t = L/2$	With line power feed
$L_t = L/6$	With power feed 1/6 at each end
$L_t = L/10$	With three power feed at $L/2$ and $L/10$ from each end

System with end power feed



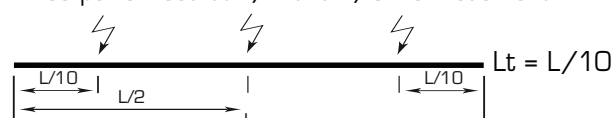
Two power feed 1/6 from each end



System with line power feed



Three power feed at $L/2$ and $L/6$ from each end



Energy and data transmission

TR85 Trolley Series

Line construction



TECHNO-LIFTING EQUIPMENT

LINE CONSTRUCTION

To define the size of trolley line TR85, is necessary to consider:

- Maximum current in service
- Devices (motors cage, ring, resistors, electronic starters)
- Devices starting currents
- Maximum ambient temperature
- The distance between device and nearest power feed
- Admissible voltage and voltage dropping in starting and continuous service
- Type of current
- Devices cycle operations (load factor)

CURRENT IN CONTINUOUS SERVICE

Specify devices number which work simultaneously to calculate the corresponding current:

$$I_N = I_1 + I_2 + \dots + I_n$$

The current can be determined from the devices power (w) that for a three-phase system is:

$$I_N = \frac{P_u}{\sqrt{3} \cdot U \cdot \cos \varphi \cdot \eta}$$

I_N	Current Consumption - Amper
P_u	Power devices - Watts
η	Devices performances
U	Operating voltage in volts
$\cos \varphi$	Power factor

In the absence of information on the simultaneous devices operations, consider following table:

Lifting numbers devices on line	LIFTING EQUIPMENTS IN USE			
	1st ENGINE Engine max. power (*)	2nd ENGINE	3rd ENGINE	4th ENGINE
1	x	x		
2	x	x	x	
3	x	x	x	
4	x	x	x	x
5	x	x	x	x
no.2 lifting equipments operating in contemporary	x	x	x	x

(*) To drag n parallel motors rated current I_n' , consider $I_N = n \cdot I_n'$

Energy and data transmission

TR85 Trolley Series

Line construction

LINE CONSTRUCTION

STARTING CURRENT

Calculate devices numbers in simultaneously started and already in service, then calculate the corresponding current. When the starting current is unknown, proceed with the following approximation:

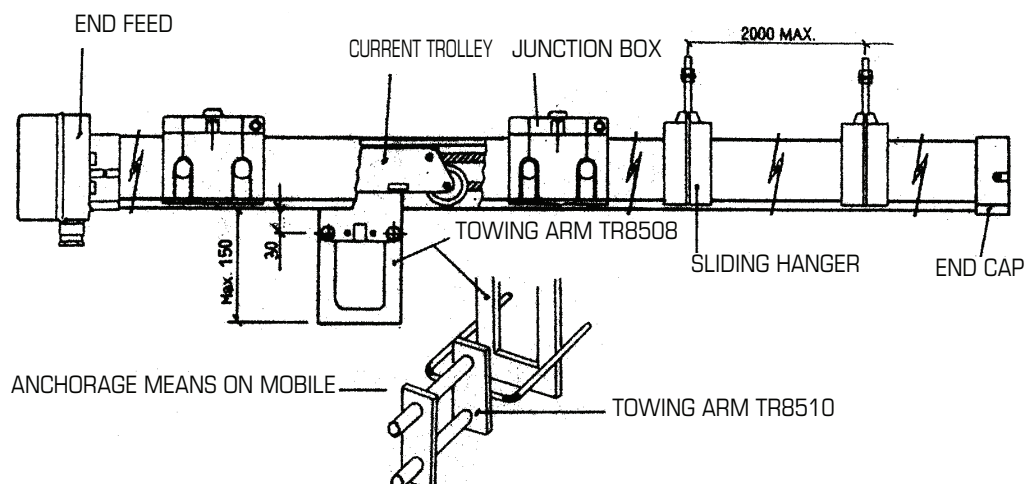
$$I_a = K \cdot I_n \quad \text{for a single user}$$

Where $K = \frac{\text{Starting current (I}_a\text{)}}{\text{Nominal current (I}_n\text{)}}$ As a general rule, consider:
 $K = 5$ to 6 for the cage motors,
 $K = 2$ rotors winding motors
 $K = 2$ with frequency converters

In the absence of information on the simultaneous operation of utilities relate to the following table:

Lifting numbers devices on line	LIFTING EQUIPMENTS IN USE							
	1st ENGINE		2nd ENGINE		3rd ENGINE		4th ENGINE	
	I _a	I _n	I _a	I _n	I _a	I _n	I _a	I _n
1	X			X				
2	X			X		X		
3	X		X					
4	X		X			X		
5	X		X			X		X
no.2 lifting equipments operating in contemporary	X		X			X		X

LINE SCHEMATIC EXAMPLE



Energy and data transmission

TR85 Trolley Series

Examples



TECHNO-LIFTING EQUIPMENT

GENERAL CHARACTERISTICS

to define line overall length is necessary to consider the standard modular length, festoons, except the curves, which obtain with PVC conductors 40A to 140A, 3 and 4 meters, 200A only 4 meters. The real length of the line will therefore be higher or lower than the theoretical length assumed or required.

Sample order and composition of a line following the scheme indicated.

TR85 TROLLEY SERIES A LINE FROM 70A TO 4 CONDUCTORS

- ① Sector mt 15,250 = 15.250 mm
 15.250 mm - 85 mm (Power feed) = 15.165 mm
 no. 3 rail tracks 4 m = 12.000 mm TR85704C
 no. 1 rail tracks 3 m = 3.000 mm TR85704C3
 12.000 mm + 3.000 mm = 15.000 mm - 15.165 mm = - 165 mm

- ② Sector mt 8,750 = 8.750 mm
 no. 3 rail tracks 3 m = 9.000 mm TR85704C3
 9.000 mm - 8.750 mm = + 250 mm (exceeding)

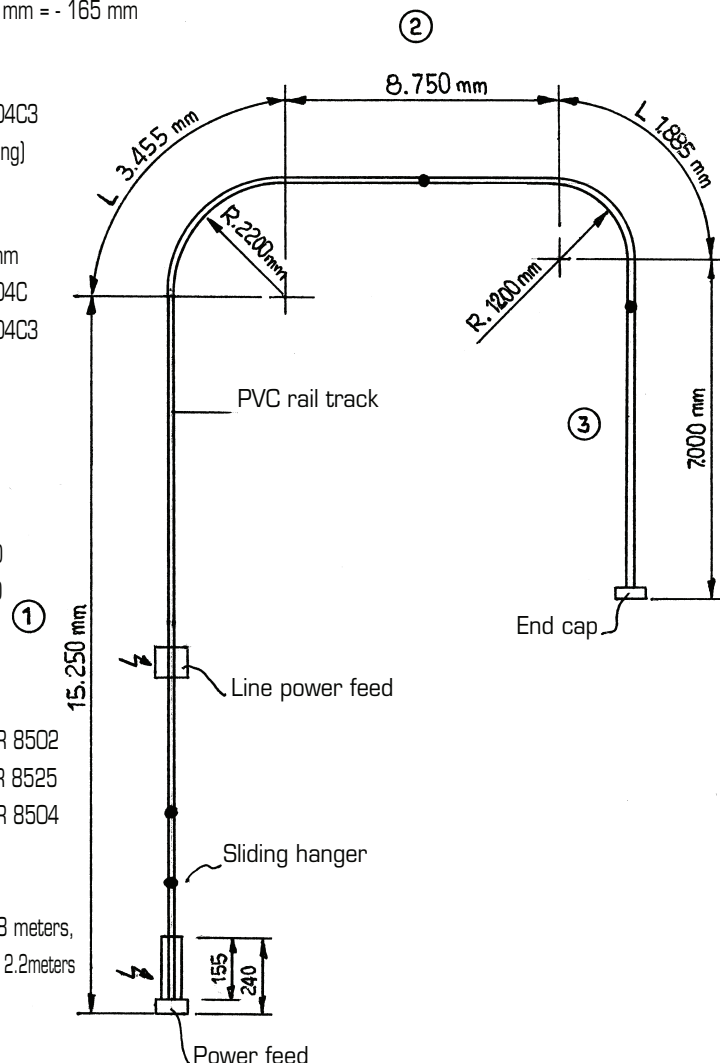
- ③ Sector mt 7,00 = 7.000 mm
 15.250 mm - 290 mm (Power feed) = 14.960 mm
 no. 1 rail tracks 4 m = 4.000 mm TR85704C
 no. 1 rail tracks 3 m = 3.000 mm TR85704C3
 7.000 mm - 7.000 mm = 0

Total rail track: ①+②+③ Sector = 31m = n.5 rail tracks
 from 3m + no.4 rail tracks to 4m

- Curve** R. 2.200 mm = L 3.455 mm TR8529704D90
Curve R. 1.200 mm = L 1.885 mm TR8529704A90

- Power feed** from 40A to 140A no.1 TR 8503A4
End cap from 40A to 200A no.1 TR 8506A
Sliding hanger from 40A to 140A in Plastic no. 17 pcs (*) TR 8502
 from 40A to 140A in Metal no. 17 pcs (*) TR 8525
Junction box from 40A to 200A in PA no. 10 pcs (*) TR 8504
Junctions box n. is in base of PVC rail tracks number + 2

- (*) Add n. 2 sliding hanger every Curve with radius from 1.2 to 1.8 meters,
 R. 1.200 to 1.800 mm, n.3 Sliding hangers every Curve with radius 2.2meters
 R. 2.200 mm



Energy and data transmission

TR85 Trolley Series

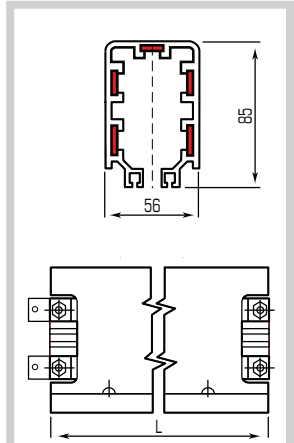
Conductor rails - Line A "plug-in" type



CONDUCTOR RAIL INSULATING INTERMEDIATE 40A - 70A - 100A - 140A

L IN METERS	N° CONDUCTORS	REACH	
		40A	70A
3	4	TR85404C3	TR85704C3
	5	TR85405C3	TR85705C3
4	4	TR85404C	TR85704C
	5	TR85405C	TR85705C

L IN METERS	N° CONDUCTORS	REACH	
		100A	140A
3	4	TR851004C3	TR851404C3
	5	TR851005C3	TR851405C3
4	4	TR851004C	TR851404C
	5	TR851005C	TR851405C

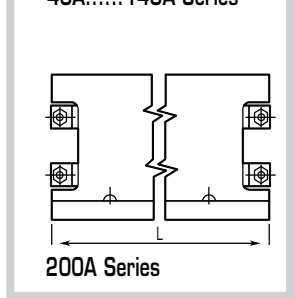


40A.....140A Series



BAR INSULATING INTERMEDIATE 200A

L IN METERS	N° CONDUCTORS	REACH 200A
3	4	TR852004C3
	5	TR852005C3
4	4	TR852004C
	5	TR852005C



200A Series

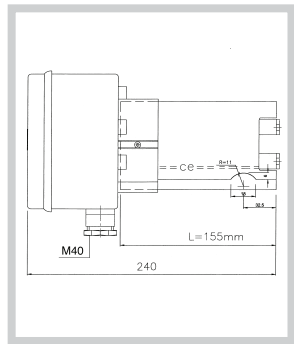


POWER

Standard length 200 mm

L IN mm	N° CONDUCTORS	REACH
		40A....140A
200	4	TR8503A4
	5	TR8503A5

L IN mm	N° CONDUCTORS	REACH
		200A
200	4	TR8533A4
	5	TR8533A5



CLOSING

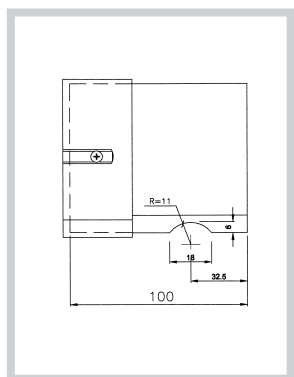
Standard length 100 mm

Closed neutral Rails at 4 and 5 Conductors from 40A to 200A

CODE MIN. PACK QTY.

TR8506A

1




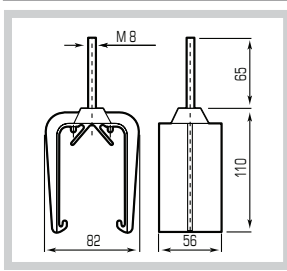

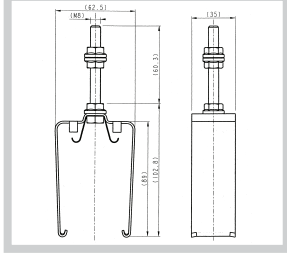

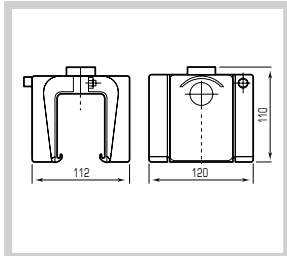

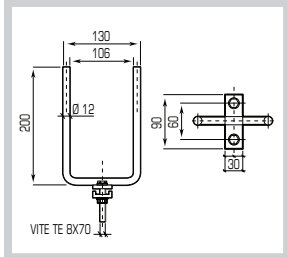

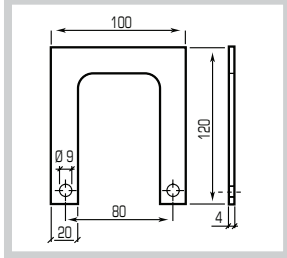
Energy and data transmission

TR85 Trolley Series

Conductor rails - Line A "plug-in" type




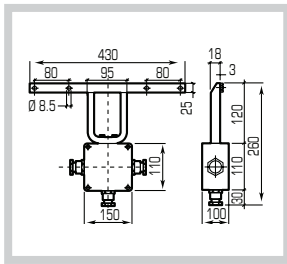
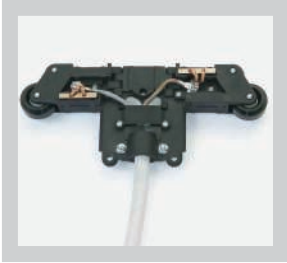
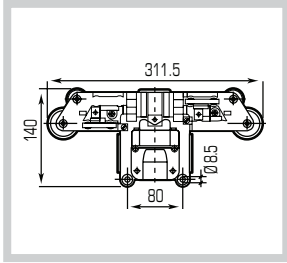

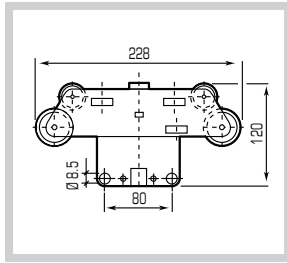

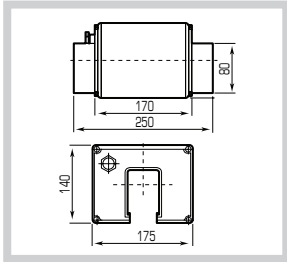
TECHNO-LIFTING EQUIPMENT

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Hanger clamp only for 40A a 140A</p> <ul style="list-style-type: none"> Material: PA 66 Max support spacing 2 mt (<i>reccomended</i>) 	TR8502	1	
	<p>Steel hanger clamp</p> <ul style="list-style-type: none"> Material: PA6 and galvanized steel For series from 40A to 140A max support spacing 2 mt (<i>reccomended</i>) Series 200A n.1 max support spacing 1 mt (<i>reccomended</i>) 	TR8525	1	
	<p>Joint cover For to join the end of two conductor rails</p> <ul style="list-style-type: none"> Material: PA 66 	TR8504	1	
	<p>Towing arm</p> <ul style="list-style-type: none"> Material: galvanized steel 	TR8510	1	
	<p>Towing arm bracket For 35A and 70A current collectors</p> <ul style="list-style-type: none"> Material: galvanized steel 	TR8508	1	

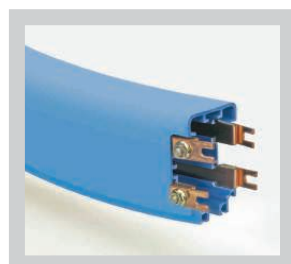
Energy and data transmission

TR85 Trolley Series

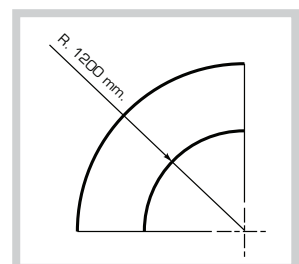
Conductor rails - Line A "plug-in" type

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Support for double towing arm</p> <p>Connects two trolley in parallel to increase current rating</p> <ul style="list-style-type: none"> For 35A and 70A current collector trolley 	TR8523	1	
	<p>70A Current collector trolley</p> <ul style="list-style-type: none"> Fully insulated body with copper graphite collector shoes. Wheels equipped with ball bearings. For current rating over 70A. Connect more trolleys on parallel <ul style="list-style-type: none"> 70 amp. 3 Poles 70 amp. 4 Poles 70 amp. 5 Poles 	TR8522 TR8518 TR8519	1 1 1	
	<p>35A Current collector trolley</p> <ul style="list-style-type: none"> Fully insulated body with copper graphite collector shoes. Wheels equipped with ball bearings. <ul style="list-style-type: none"> 35 amp. 3 Poles 35 amp. 4 Poles 35 amp. 5 Poles 	TR8521 TR8511 TR8512	1 1 1	
	<p>In line feed</p> <ul style="list-style-type: none"> Cable entry with Pg 29 cable gland 	TR8526	1	

CURVE 90° WITH 4 CONDUCTORS



Radius:	40A	70A
R. 1200 mm	TR8529404A90	TR8529704A90
R. 1400 mm	TR8529404B90	TR8529704B90
R. 1800 mm	TR8529404C90	TR8529704C90
(1) R. 2200 mm	TR8529404D90	TR8529704D90
	100A	140A
R. 1200 mm	TR85291004A90	TR85291404A90
R. 1400 mm	TR85291004B90	TR85291404B90
R. 1800 mm	TR85291004C90	TR85291404C90
(1) R. 2200 mm	TR85291004D90	TR85291404D90



(1) Curve composed by 2 pieces

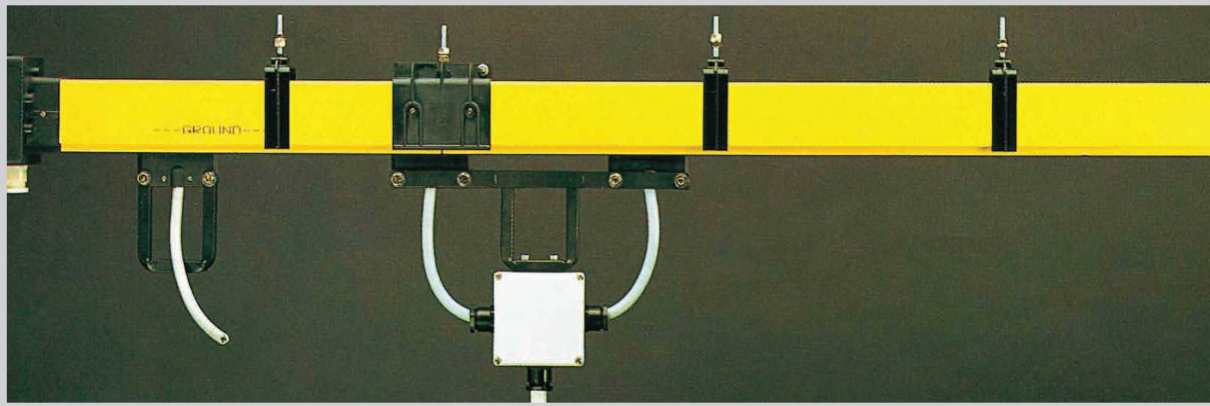
Energy and data transmission

TR85 Trolley Series

Conductor rails - Line B "continuous strip" type



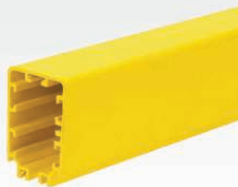
TECHNO-LIFTING EQUIPMENT



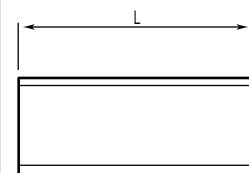
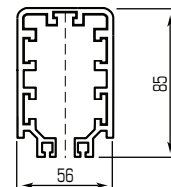
PVC RAIL TRACK

Conductors are supplied separately. The copper strip is pulled from a coil into the plastic casing with the aid of the TR8513 de-coil unit and TR8514 strip insertion trolley available Series to 140A

Standard length: 4mt



L IN METERS	N° CONDUCTORS	70A	REACH 100A	140A
4	4	TR85704	TR851004	TR851404
	5	TR85705	TR851005	TR851405



DESCRIPTION

CODE

MIN. PACK QTY.

DIMENSIONS

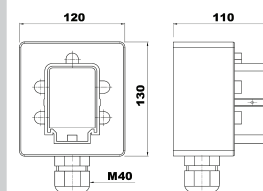


End feed

- Cable entry with M40 cable gland
- Material: PA 66

TR8503

1

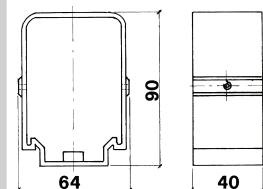


End cap

- To close the ends of the line
- Material: PA 66

TR8506


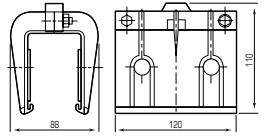

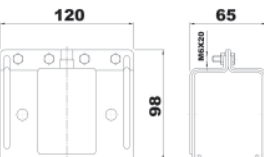

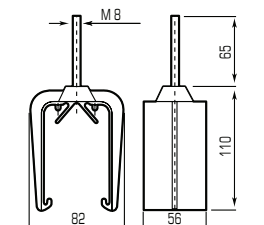

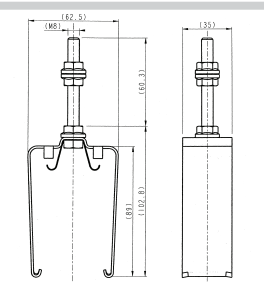

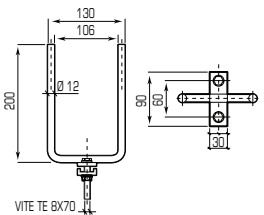
1



Energy and data transmission

TR85 Trolley Series

Conductor rails - Line B "continuous strip" type

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Joint cover For to join the end of two conductor rails.</p> <hr/> <ul style="list-style-type: none"> Material: PA 66 	TR8501	1	
	<p>Steel joint cover For to join the end of two conductor rails</p> <hr/> <ul style="list-style-type: none"> Material: galvanized steel 	TR8524	1	
	<p>Hanger clamp Allows the linear expansion due to climate conditions</p> <hr/> <ul style="list-style-type: none"> Max support spacing 2 mt recommended Material: PA 66 	TR8502	1	
	<p>Steel hanger clamp</p> <hr/> <ul style="list-style-type: none"> Material: PA6 and galvanized steel Mounting space between two hanger clamps for series from 40A to 140A: 1,5 mt max 	TR8525	1	
	<p>Towing arm</p> <hr/> <ul style="list-style-type: none"> Material: galvanized steel 	TR8510	1	


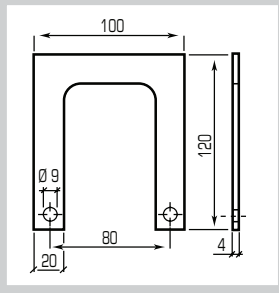

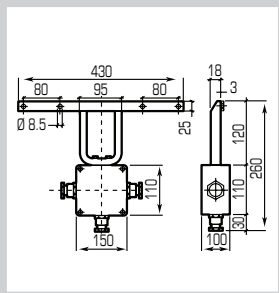

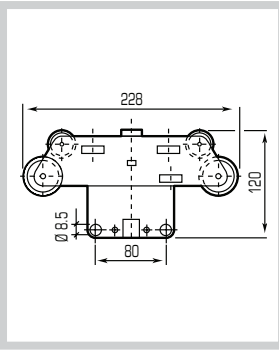

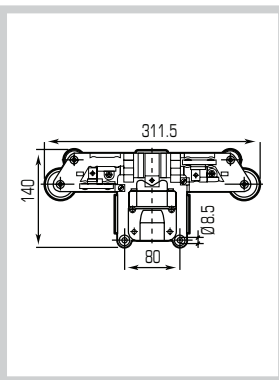
Energy and data transmission

TR85 Trolley Series

Conductor rails - Line B "continuous strip" type




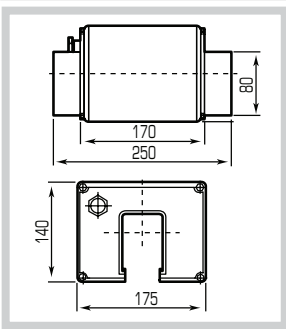

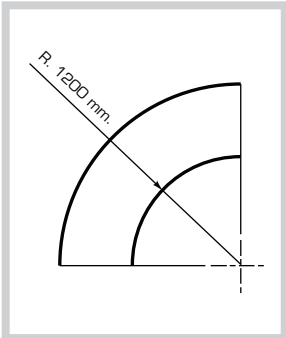
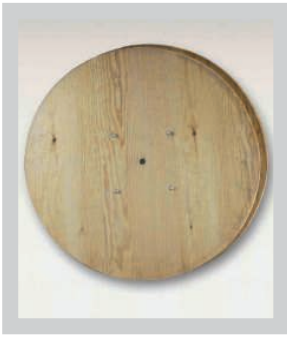
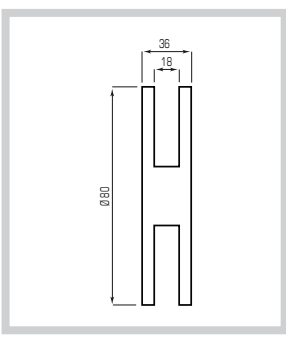

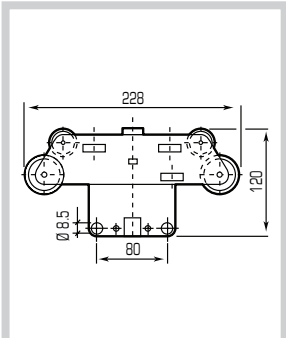
TECHNO-LIFTING EQUIPMENT

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>Towing arm bracket For 35A and 70A current collectors</p> <ul style="list-style-type: none"> Material: galvanized steel 	TR8508	1	
	<p>Support for double towing arm Connects two trolley in parallel to increase current rating</p> <ul style="list-style-type: none"> For 35A and 70A current collector trolley 	TR8523	1	
	<p>35A Current collector trolley fully insulated body with copper graphite collector shoes. Wheels equipped with ball bearings.</p> <ul style="list-style-type: none"> 35 amp. 3 Poles 35 amp. 4 Poles 35 amp. 5 Poles 	<p>TR8521</p> <p>TR8511</p> <p>TR8512</p>	<p>1</p> <p>1</p> <p>1</p>	
	<p>70A Current collector trolley Fully insulated body with copper graphite collector shoes. Wheels equipped with ball bearings. For current rating over 70A. Connect more trolleys on parallel</p> <ul style="list-style-type: none"> 70 amp. 3 Poles 70 amp. 4 Poles 70 amp. 5 Poles 	<p>TR8522</p> <p>TR8518</p> <p>TR8519</p>	<p>1</p> <p>1</p> <p>1</p>	

Energy and data transmission

TR85 Trolley Series

Conductor rails - Line B "continuous strip" type

	DESCRIPTION	CODE	MIN. PACK QTY.	DIMENSIONS
	<p>In line feed</p> <ul style="list-style-type: none"> ■ Cable entry with Pg 29 cable gland 	TR8526	1	
CURVE 90° WITH 4 CONDUCTORS				
	Curve radius:	70A... 140A	1	
	_____ R. 1200 mm	TR8529A90		
	(1) R. 1400 mm	TR8529B90		
	(1) R. 1800 mm	TR8529C90		
	(1) R. 2200 mm	TR8529D90		
<p>The curve must be ordered together with the line. The wires are already calculated in the total length of the line.</p>				
INSTALLATION ACCESSORIES				
	De-coil unit	TR8513	1	
	Strip insertion trolley	TR8514	1	

(1) Curve composed by 2 pieces

Energy and data transmission

TR85 Trolley Series

Line A and B



TECHNO-LIFTING EQUIPMENT

ACCESSORIES - SPARE PARTS



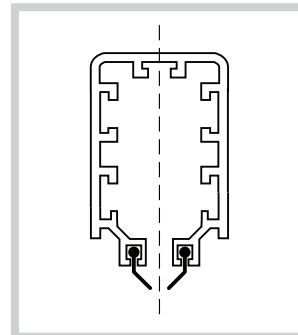
IP23 SEALING STRIPS

Protects and prevents accidental operation of the operator

- PVC Material
- Hardness Shore A 81
- Resistance to cold - 30 degrees
- Stretching 340%

For order, to consider twice the length of the line

TR8505



INSPECTION JOINT

With multiple trolleys allow easy maintenance or replacement of trolleys.

TR8528



COLLECTOR SHOES

35A Trolley

TR8517

70A Trolley

TR8520



FIXED POINT

Used to create a fixed point along the line as a starting point for the distribution of expansions.

TR8527

Energy and data transmission

CP Series conductors

Flat cables

PVC FLAT CABLES ANTI-AGING H07VVH6-F

Particularly suitable for supply and control circuits, lifting and handling equipment.



- Comply with CEI 20 - 22 II (flame resistant)
- Insulation class 2/3
- Operational voltage 450/750V
- Sheathing colour blue
- Internal conductors with flexible PVC sheathing progressively numbered, plus earth conductor (yellow/green)
- Operating temperature -5 °C +70 °C

CODE	N° CROSS SECTION	APPROXIMATE OUTER DIMENSIONS	STRAND n./ mm	APPROXIMATE WEIGHT gr/m	TOTAL CROSS SECTION mm ²	CODE	N° CROSS SECTION	APPROXIMATE OUTER DIMENSIONS	STRAND n./ mm	APPROXIMATE WEIGHT gr/m	TOTAL CROSS SECTION mm ²
CP0415AF	4X1,5	15X5,2	30X0,25	150	6	CP2425AF	24X2,5*	54X13	50X0,25	1.100	60
CP0815AF	8X1,5	29X5,5		300	12	CP0404AF	4X4	21X7,5	56X0,30	330	16
CP1215AF	12X1,5	41X5		420	18	CP0804AF	8X4	38X5		550	32
CP1615AF	16X1,5	54X8		510	24	CP0406AF	4X6	24X8	84X0,30	440	24
CP1815AF	18X1,5	43X11		700	27	CP0806AF	8X6	38,5X8		742	48
CP2415AF	24X1,5	51X13		1.000	36	CP0410AF	4X10	35X11	7X12X0,40	800	40
CP0425AF	4X2,5	21X5,7		50X0,25	240	10	CP0416AF	4X16	36,5X12	7X18X0,40	1.200
CP0825AF	8X2,5	33X6	420		20	CP04250AF	4X25	43X13	7X28X0,40	1.700	100
CP1225AF	12X2,5	50X7	640		30	CP0435AF	4X35	50X14	7X39X0,40	2.050	140
CP1625AF	16X2,5	41X13	1.000		40						
CP1825AF	18X2,5*	50X13	1.050		45						

On request the same cables can be supplied - minimum requirement is 500 m - with: heat resistant upto 105° tinned red copper shield.

* Minimum supply 500 m.

Energy and data transmission

CT Series conductors

Round cable with dual strain relief cords



TECHNO-LIFTING EQUIPMENT

ROUND CABLE WITH DUAL STRAIN RELIEF STEEL WIRES - S05VVD7-F

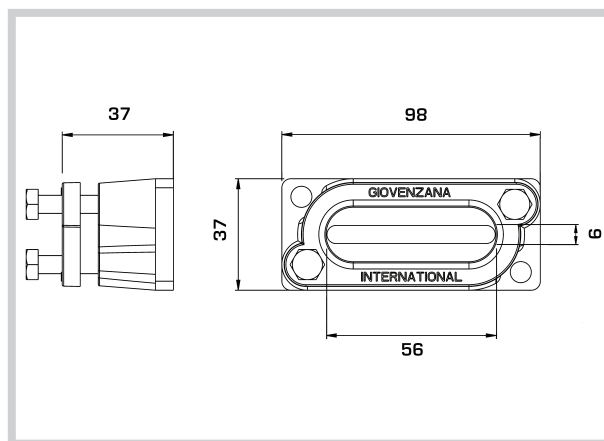
Made for heavy duty applications in particular for pendant push button stations and moving electromechanical components. The two steel wire ropes are embedded, diametrically opposed to PVC sheathing. The rope cut into lengths and just hooked the steering control to avoid any stress on the cable.



- Comply with CEI 20 - 22 II (flame resistant)
- Insulation class 2/3
- Operational voltage 300/500V
- Sheathing colour blue
- Internal conductors with flexible PVC Sheathing progressively numbered, plus earth conductor (yellow/green)
- Operating temperature: -5°C +70°C
- Ø 2mm steel wires
- Breaking point: 60 kg/mm²

CODE	N° CROSS SECTION	APPROXIMATE OUTER CABLE Ø	DIMENSIONS WIRE ROPE	STRAND n./ mm	APPROXIMATE WEIGHT gr/m	TOTAL CROSS SECTION mm ²
CT0815AUAF	8X1,5	11,6	23,6	30X0,25	225	12
CT1215AUAF	12X1,5	14,4	26,4		315	18
CT1615AUAF	16X1,5	16	28		415	24
CT1815AUAF	18X1,5	17	29		470	27
CT2015AUAF	20X1,5	18	30		525	30
CT2415AUAF	24X1,5	21	33		620	36

PRESSACAVO MONOLITHIC IN PA FOR FLAT CABLE



12903010

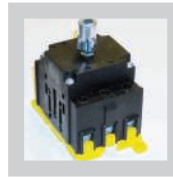
Energy and data transmission

Complementary products

Switch - Disconnectors

BOX FIXING FOR DOOR INTERLOCK COMMAND

- Comply with rules: IEC 947-3, EN60947-3, UL 508
- Fixing box DIN-RAIL 50022-35
- Terminal protection class IP20
- Complete of command to knob with locking (max.3 lck) with yellow front plate - red knob
- Protection class EN60529-IP65, UL50 Type 1 - 4 - 4x (*)

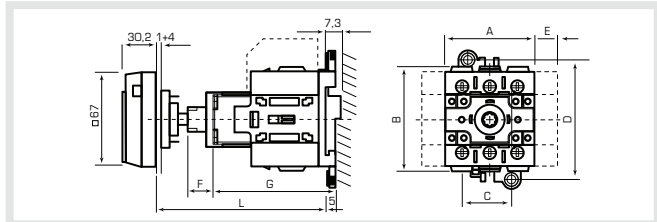


SERIES	AC-21A AMP.690V	AC-23A AMP.400V	SCHEME	CODE
SQ032	40	32	<p>3 POLES</p>	SQ032003B
SQ063	80	67		SQ063003B
SQ125	125	125		SQ125003B

DOOR INTERLOCK COMMAND



- Yellow front plate
- Red-knob
- Locking knob (Max3)
- 67



FOR SERIES	CODE	SERIES	A	B	C	D	E	F	G	L
SQ032	012/0001*	SQ032	45	52,6	22	60	12,5	13,5	60,3	80...142 max
SQ063	042/0001*	SQ063	52,5	72,5	43,5	82,5	17,5	23,5	67,8	112...142 max
SQ125	231/0001	SQ125	65,2	92	51,2	102,2	22,5	16	64	127...327 max

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS IEC/EN60947-3			SQ032	SQ063	SQ125	
Rated insulation voltage U_i	V		690	690	800	
Rated impulse withstand voltage U_{imp}	kV		8	8	8	
Rated thermal current $I_{th-lthe}$	A		40	80	125	
Frequency	Hz		50/60	50/60	50/60	
RATED OPERATING CURRENT I_e :						
AC-21A Switching resistive loads with light overloads	690V	A	40	80	125	
AC-22A Switching mixed resistive and inductive loads with light overloads	690V	A	32	80	25	
AC-23A Periodic switching of motors	3 phases - 3 poles	230V	A	32	75	125
		400/500V	A	32	67	125/100
	690V	A	20	32	80	
Rated breaking capacity ($\cos\phi$ 0,45)	400V	A	256	536	1000 ($\cos\phi$ 0,35)	
Conditional rated short circuit		kA	10	10	10,5	
Fuse rating gG	690V	A	40	63	125	
Connectable section	flex cable	mm ²	1,5-10	6-25	10-70	
	rigid cable	mm ²	1,5-16	10-35	10-70	
		AWG	12-6	10-2	-	
General Use UL 508	600Vac	A	40	80	-	

- Performing basic 3 poles with mounting possibilities on three sets of power contacts, Neutral, ground and auxiliary contacts NC and NO.
- Certification cUL Series SQ032 - SQ063

GIOVENZANA INTERNATIONAL B.V.

Annotations



TECHNO-LIFTING EQUIPMENT

A large rectangular area containing horizontal lines for writing, bounded by a thick yellow line at the top and bottom and thin black lines on the left and right sides.

